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ABSTRACT

The emphasis of this NIMH report is to improve our understanding of the origins of violence and to suggest ways of acting on that knowledge to reduce the incidence of crime and violence in American society. Also included in this volume are details of work aimed at reducing the toll of such problems as alcoholism and suicide among our citizens; a new approach in treating alcoholics; and efforts to understand and prevent adolescent suicides. Avenues for reducing the effects of cultural deprivation are explored in a study of young children from disadvantaged families. New efforts designed to meet the special mental health needs of Americans in contrasting settings--urban and rural--are also described. This volume also contains reports of the Institute's continuing efforts in basic biological and behavioral research--efforts aimed at helping to understand, for example, the genetic bases of mental illness, and the neurophysiological background of man's intellecutal and emotional functions. (Author/NG)

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Mental Health PROGRAM REPORTS-4

National Institute of Mental Health

CG 007 338

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MENTAL HEALTH PROGRAM REPORTS – 4
January 1970

Prepared by:

Program Analysis and Evaluation Branch
Office of Program Planning and Evaluation

National Institute of Mental Health
Chevy Chase, Maryland 20015

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FOREWORD

The concern of the National Institute of Mental Health with problems of social importance is well demonstrated in this, the fourth volume of the *Program Reports* series. A number of the NIMH projects described here, for example, deal with studies of various aspects of violence. The emphasis of the NIMH effort in this area is not only to improve our understanding of the origins of violence, but to suggest ways of acting on that knowledge to reduce the incidence of crime and violence in American society. Included also in this volume are details of work aimed at reducing the toll of such problems as alcoholism and suicide among our citizens; ~~the Institute's search~~ for new approaches in treating alcoholics is illustrated in one report, and in another, efforts to understand and prevent adolescent suicides. Avenues for reducing the effects of cultural deprivation are explored in a study of young children from disadvantaged families. New efforts designed to meet the special mental health needs of Americans in contrasting settings—urban and rural—are also described.

~~At the same time~~, this volume contains reports of the Institute's continuing efforts in basic biological and behavioral research—efforts aimed at helping to understand, for example, the genetic bases of mental illness, and the neurophysiological background of man's intellectual and emotional functions. Fundamental studies such as these remain as an essential feature of the Institute's overall program in the prevention, diagnosis, and treatment of mental illness.

Coordination and preparation of the *Program Reports* series are under the direction of Dr. Julius Segal as part of the activities of the Institute's Program Analysis and Evaluation Branch. As always, the reader's comments and suggestions are welcome.

Stanley F. Yolles, M.D.,
Director,
National Institute of Mental Health.

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BIOLOGICAL BASES OF MEMORY

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Introduction

The survival of mankind may now hang upon how well we can educate each coming generation, since the capacity for sophisticated and cooperative behavior has become the essential of modern civilization. Ironically, our educational institutions lag behind us. Agriculture and medicine have been transformed by modern scientific research while the schools remain virtually untouched by the 20th century. One aspect of the scientific harvest that might indeed influence the training of the young is the exploration of biological bases for learning and memory. We can no longer afford the luxury of ignoring important problems of memory and their implications for the manner in which we teach.

The social implications of some researches in this area are just beginning to be known. Experiments with rats have divulged a genetic base for learning. As University of California Professors Krech and Rosenzweig and their associates have demonstrated, it is possible to influence the learning ability of rodents by enriching or impoverishing the environment, thereby also altering brain biochemistry. Without stimulation, there can be little learning. Without memory, there can be no learning. There appear to be many processes in memory, some related to short-term memory, some related to long-term storage, and others related to retrieval. There are some patients with brain damage, for example, who appear to be normal, with unaffected IQ's, yet they cannot learn anything new, not even a new home address. Dr. McGaugh and his associates have used electroconvulsive shock to produce a similar amnesia for new experience in animals. By this device he has seen evidence that there may be two separate stages in the implantation of any memory.

The potentiality for improving education by using such research has been demonstrated by Prof. Millard Madsen of UCLA. He has shown how knowledgeable timing of information will permit children with low IQ scores to learn quite as well and almost as fast as children with high IQ's.

In studying biochemical influences upon memory, Doctor McGaugh has recently found that biological time of day may also influence learning behavior.

History

In 1917, the psychologist William Lashley observed that rats would learn to run a maze with more celerity than usual if they were first given low doses of strychnine sulfate. The implication that drugs might influence learning or be useful in exploring memory processes was ignored for several decades. Then, stimulant drugs, known as analeptics, were again observed to facilitate learning.

In recent experiments strychnine, picrotoxin, pentylenetetrazole, and diazadamantanol have been used on animals performing prescribed and measurable tasks. Some have been discrimination problems, in which the animals learned to choose among alternative paths in a maze in order to reach a goal and to discriminate between black and white gates, while in others they had to escape from a situation in which they would be punished or learn restraint in order to avoid electric shock. The situations, while limited, were precisely controlled and therefore quantifiable. In most of the early studies, animals were first given stimulants a few minutes before their first encounter with the training, and were trained under drug influence. Did the drug influence the process we call memory? Perhaps not. Perhaps it improved performance by making the animal more attentive, by sharpening his perceptions, by enhancing his motivation, or by improving muscular coordination. Research on learning resembles the divergent reports from six blind men describing an elephant, each touching a different part of the beast. The impact of a drug upon "learning" is partly dependent upon the measure of learning. One easily quantified part of performance is the response latency—how long it takes the animal to get around to making a response. When this measure is the criterion of learning, a drug that increases response speed or alertness will also seem to improve learning. Since no experimenter can afford to use many criteria of performance, studies of learning and memory typically contain some knotty problems of method and measurement. Doctor McGaugh and his associates began to train undrugged animals, but gave them "memory" tests while they were drugged. Perhaps drugs altered dimensions of performance, although they did not act upon memory processes during learning. It soon appeared that the memory process, itself, was exceedingly subtle.

Retrograde Amnesia

One means of exploring memory is by training a creature on a narrowly prescribed performance and administering drugs or convulsive shock at intervals directly after the training. Will they interfere with the consolidation of memory? Does it matter how soon after training the shock or drug is given? In the course of many such experiments, the grantee and his associates found that animals shocked immediately, or at short intervals after training, seemed later not to recall. By strategically varying their treatment of the animals, they saw that training or experience seemed to initiate a kind of potential residue for memory. Yet this potentially permanent memory would remain labile for long periods, perhaps hours, before being permanently etched into the neural code of memory. These studies in which memory was impaired by drug or shock interference led Dr. McGaugh to wonder about enhancing memory in a similar manner. If there is a long period after training in which memory processes are active, a memory-enhancing drug could be given in this interval after training and should improve performance or make the animal resistant to calculated amnesia-electroshock.

Drugs After Training

The training procedures were straightforward. Animals were conditioned to push a lever or avoid a grid, etc. Then, after training, they were injected with drugs. After a suitable interval allowing the drugs to be metabolized, the animals were tested on the original procedure. A number of drugs appeared to enhance performance when injected after training—and by implication seemed to be acting upon the mysterious processes of memory. Strychnine, picrotoxin (at low doses), and amphetamine all seemed to enhance the learning of animals who received doses directly after training: on tests they outperformed the animals who had received only a placebo.

During the last few years, several drugs have been given to animals on a wide range of learning tasks, measured by various criteria. Clearly, the outcome is some blend of the kind of learning (it is vastly different to learn to discriminate between two colors than to learn to avoid a shock at the toll of a bell), the experimental conditions, the drug, and the amount of the drug used. Results from laboratories around the country are not all in accordance, but most of the evidence suggests that certain drugs enhance learning. If so, presumably, they are acting upon memory storage in its labile period. Presumably, these same drugs would do nothing for memory if they were injected at some maximum time after training. By carefully graded experiments, therefore, one might expect to delineate how long the labile period of memory lasts.

The procedure in this laboratory was straightforward. One group of animals would be injected with a drug 5 seconds after they responded to a learning procedure. Another group would be injected after 1 minute, still another after 5 minutes, and so on. During 1962, Doctor McGaugh was injecting strychnine at various intervals after training: he found that one strain of mice "learned" better if injected immediately after training, yet injections given a half hour after training were ineffective. On a discrimination task, one group of mice showed the greatest facilitation—by comparison with undrugged controls—if they were injected between 5 and 15 minutes *before* training.

> The results of these studies of effects of time of administration of drugs indicate that the effects are time-dependent. The magnitude of the facilitating effect decreases with the interval between training and drug administration. These findings are consistent with the studies of experimentally induced retrograde amnesia. Together, these two lines of evidence provide very strong support for the view that memory storage processes are susceptible to both facilitating and impairing influences for a relatively long period of time following training.

Environment

The elusiveness and delicacy of the process of memory—and the sensitivity of rodents—has forced the investigators to take all kinds of precautions against slamming doors and disturbance in the laboratory. The need for constant temperature, quiet, etc., was underscored by an experiment in which mice, given strychnine, were given a discrimination problem and were disrupted by environmental stimulation. Like students trying to memorize a lesson in an "acid-rock" discotheque under strobe lights, half these mice were rocked back and forth in their cage, exposed to flashing lights and bursts of sound for 20 minutes. On tests, it was the other half of the animals—who remained in dark quiet cages—who showed enhanced learning from strychnine while the stimulated animals did worse than controls. It was an encouragement for control in the learning laboratory and perhaps also a hint for humans.

Drug Attenuation of Retrograde Amnesia

Inevitably, the investigators wondered whether strychnine and other drugs enhanced learning by accelerating the rate at which memory traces were consolidated into permanent memory. If so, the drugs should prevent or attenuate the kind of retrograde amnesia that is caused by convulsive shock. Animals were given saline solution or strychnine just before or just after training: then, within a few minutes each animal was shocked. A day later each mouse was tested on the training task. The drug-injected animals did a little better on tests than did the controls who received only saline solution. It appeared that drugs attenuated the amnesia, but the reason was not clear.

Recently, the experimenters have used a different kind of task, one on which a single exposure is sufficient for a test of learning. It is known as a "one trial inhibitory test."

Each mouse is placed on a small cantilevered platform on the outside wall of a box. There is an entry hole leading to the dark interior. The mouse is a nocturnal animal. In his search for comfort and security he will soon step inside the hole. Most mice hesitate for no more than 10 seconds. Their predicament resembles that of a human being, stuck in the dead of night on a small porch without rails, hundreds of feet above ground on a skyscraper, with an open window leading to a well-lit room. What person would not try to enter that room?

The mouse, seeking the comfort and security of a dark box, would step in the hole and immediately get a shock on the foot. Twenty-four hours later he would be placed on the platform again. Would he remember that the hole leads to a "forbidden" place? Would he restrain his natural urge for security? The length of time that he would hesitate on the platform before attempting to enter the box would represent a degree of learning. This time, resisting temptation, as it were, was measured as the criterion of learning.

Each mouse was placed on the platform, received a footshock when it transgressed the boundary and then received electroconvulsive shock. For some, the shock came within 18 seconds; for some, it came after 18 seconds; and other animals received it an hour or 3 hours later. Some of these mice were on saline solution, whereas half the mice received strychnine either 10 minutes before or a minute after the platform training.

Twenty-four hours later, each mouse was put to the test, placed on the platform, and clocked. The amount of time an animal stayed on the platform without moving through the hole was directly proportional to the amount of time he had been allowed between his first experience and electroconvulsive shock. The animals given shock 3 hours after training showed no amnesia at all. Control animals given shock 18 seconds or a minute after their training experience seemed to have forgotten that entry was forbidden. Those pretested with strychnine were not rendered so completely amnesic by shock at the same short intervals. Oddly enough, some memory also persisted in the animals who had injections of strychnine *after the electroshock*.

> If strychnine affects learning by accelerating consolidation processes, these injections should have no effect. However, as can be seen, retention of these animals was superior to that of controls.

Why should strychnine counteract the amnesia effects when injected *after* electroshock?

In the next series of experiments, strychnine was administered at varying intervals after the electroshock. Evidently the critical interval was the timing of the shock. Strychnine did not improve the retention of an animal given shock 8 seconds after training; yet if shock was delayed a minute or 3 hours, strychnine made a difference. In subsequent experiments, it became evident that the timing of the strychnine was also pertinent. The longer the interval between the drug and the shock, the less effect the drug had in improving memory. If injected 9 hours after shock, it was totally ineffective. Further studies showed the same effects with other stimulants such as picrotoxin.

It appeared that these drugs did not act—as previously believed—by accelerating memory consolidation. Otherwise, why should they cancel the amnesic effects of electroshock?

Doctor McGaugh and his associates conjectured that there might be two distinct phases in memory consolidation. Perhaps the first step is a formation of a pattern in the brain which is then used to "empattern" storage material in the permanent "files" of the mind. Electroshock might prevent the first step if given instantly, within 8 seconds of an experience, perhaps eradicating that initial pattern. However, if that first pattern were permitted time to form—taking more than 8 seconds—then shock blocks the second stage of permanent storage. This means that if one were to wait a sufficiently long time after a training trial, the first phase of memory would be impervious to erasure by shock. What shock does, at longer intervals, is to obliterate the second stage—and it was the second stage that was influenced by drugs.

Drugs might affect learning in many ways, and as we come to understand them it may be possible to evolve chemotherapies for defective memory, such as those of the elderly or the retarded child, or disorders like those of brain-damaged patients. In recent years many experimenters have postulated that the synthesis of nucleic acids must be involved in memory. Antibiotics can inhibit the synthesis of RNA, yet injections do not impair learning in animals. Puromysin inhibits protein synthesis, and when injected into the brain of a goldfish has produced effects resembling those of electroshock. Some researchers have postulated that memory depends upon changing levels of neurotransmitters such as acetylcholine. Using chemicals that effectually raise the levels of acetylcholine in the brain, one laboratory found that there were extraordinary effects upon memory—an injection might eradicate memory of a task learned 11 days earlier but enhance a performance learned 30 days before. Clearly, memory processes are time-dependent, and changes occur in some mysterious but presumably regular order.

A new dimension has been added to the study of time-and-memory by the finding that biological time of day influences memory.

Daily Rhythms of Memory

In recent studies with Dr. Gwen Stephens, the grantee has found that mice retain inhibitory training best if trained at night, when they are at the peak of their body temperature and motor activity for the 24 hours. Indeed, just as training seems more vividly impressed at this time, the obliterating effects of shock are also more pronounced when they follow 3 minutes after training at this peak time.

Mice were placed on the platform, and within 10 seconds most of them would set foot through the hole into the box, only to be shocked. Now, if replaced on the platform within 5 seconds, some seemed not to remember and would step again into the forbidden place. However, if they were given their second experience on the platform after a delay, they would hover there for a long time before venturing in. A day later they would again hover, resisting the urge to enter the dark and comfortable hole. The criterion for remembering was set at 30 seconds—for if the animal hovered that long without entering he clearly recalled the shock. If he restrained himself for less than 30 seconds, there was some loss in the strength of his memory. The gradient between 30 seconds and zero seconds was taken to measure the loss of memory, since animals placed on the platform the first time would often hesitate for a few seconds before exploring.

A recent series of experiments was run in several ways. Some animals never received more than one experience on the platform. Others were placed there several times in succession. Groups of animals destined for the same schedule of treatment were trained and tested at trough and crest of the 24-hour temperature-activity rhythm.

Ironically, much of the study of memory and the impact of drugs has been conducted with rodents. They are nocturnal animals, whose peak activity occurs in darkness. Yet these animals are treated in most laboratories as if they were diurnal. Usually they are tested at times when they would normally be resting and sleeping.

The influence of experimental order within a training and treatment session was noticed in 60 mice who were put on the platform, given shock, and later tested. It seemed to matter whether the mice had been in the early part, the middle, or the late portion of an experiment, since the training and treatment of 60 animals stretched out across 2 or 3 hours. Were the animals responding to noise in the laboratory, to lighting, to the experimenters?

Under the suggestion that time of day might matter, experimental data for one study were submitted to a double analysis. The usual analysis scored groups of animals for their retention, grouping them according to the elapsed time between training and shock. Those animals shocked within 5 seconds of training showed almost no retention; those shocked after 15 seconds or many minutes later showed signs of memory in proportion to the interval between training and shock.

However, the neat correlation between retention and elapsed time before shock was thrown into complication if the data were grouped differently. If averages were taken by cage of four animals in the order trained—regardless of the interval between training and shock—the retest scores show a striking fluctuation. No longer is there a clean straight line, suggesting the direct correlation between elapsed time before shock and retention. Instead, it would seem that physiologic status of the individual animal at the time of training and treatment is a big factor in the retention of the animal—regardless of the length of time between training and shock.

The experimenters discovered, for instance, that the animals trained in the first 20 minutes of a 2-hour experiment were very different from those trained in the last third of the experiment. They showed no correlation between retention and the interval between training and shock. Yet those animals processed later did show a correlation. Was this due to the experimenters, to noise in the laboratory, to time of day?

In these "time of day" experiments, the animals have been housed in quiet cages, protected from disturbance, and maintained at a constant temperature on a rigid lighting schedule. The mice live in darkness from 4 p.m. to 4 a.m. and in light between 4 a.m. and 4 p.m. This entrains the animals' temperature rhythm so that at the 1 p.m. experimental hour they are at trough values; at the 9 p.m. session they are at crest.

Time of Day and Amnesia

Recently, an experimental population of 72 mice was divided into six groups. Half were processed at 1 p.m., the middle of the animals' rest period; the other half were processed at 9 p.m. at about the peak of activity. In each time period, for each of three conditions there was a control group of animals who received only a sham electroshock, while the others were put into convulsion. Each animal went through three trials on the platform, one group receiving shock at 3 minutes and another an hour after the training. The amnesia following shock was most pronounced in the animals treated at 9 p.m. This surprised the experimenters who commented:

> This could mean either that memory consolidation varies inversely with metabolic activities or susceptibility to electroconvulsive shock varies directly with metabolic activity. Whatever the basis, such variations must be considered in experimental investigations of memory storage processes.

The greatest response to shock occurred at the time when the animal's temperature reached its daily peak, at a time when there would be a high concentration of adrenal steroids in the blood. A correspond-ence between biological time of day and the strength of conditioned fear and also extinction has been observed by Dr. Charles Stroebel of the Institute of Living in Hartford. He postulated that certain emotional conditioning might show a time-lock—linking strength of memory and the biological time of day at which the conditioning took place.

In a series of experiments conducted in Doctor McGaugh's laboratory, it was found that animals treated by day differed from the animals treated at night. Indeed, animals who were put into shock right after multiple experiences on the platform were unusually resistant to the amnesic effects of shock if they had been trained between 9 and 11 o'clock in the evening—their period of high temperature and peak activity. This suggested again that retention of avoidance reactions must be strongly influenced by physiological cycles.

An animal's temperature curve over 24 hours is not a sine wave. Temperatures were obtained from 72 animals on a schedule of 12 hours of light and 12 hours of darkness. These animals were protected from disturbance and maintained on a steady, even room temperature. In the course of 3 days, it was clear that the rectal temperature would show a 2° to 3° change each 24 hours. The peak would occur around 9 p.m., and the nadir at about 1 p.m. These were now the hours selected for experimental trials.

In repeated trials on the platform, with shock or sham shock delivered at varying intervals, it was possible to examine the animals' rates of learning. How quickly did they learn and how resistant were they to forgetting that they must hover on that platform and not enter the forbidden hole? In several replications of the experiment at different hours of day and night, the animals' rates of learning and persistence of memory were scored. Both seemed to fluctuate, rising and falling rhythmically around the clock. It suggested that the animals were fluctuating in some basic level of arousal.

Clearly, retrograde amnesia did not simply depend upon the time allowed between the acquisition of some new learning and an electroconvulsive shock. Indeed, it depended upon the phase of the animal's temperature rhythms and other factors. The most sizable fluctuation seemed to correspond with the daily rise and fall in adrenal steriods and temperature. Almost every system in the body is known to show a roughly 24-hour fluctuation in function.

Recently, the investigators have been shifting the lighting schedule 3 hours in order to see how animals learn and remember during periods of biological transition. If the lighting is shifted by 3 hours, there are some days in which the animals are readjusting to the new day-night cycle, and they no longer show their former crest of activity and temperature. Now, when the experiments are run at 1 p.m. and 9 p.m., the memory gradients are no longer the same. Perhaps the disruption of sleep schedules, as this experiment suggests, also disrupts some memory functions.

Implications

All of these facets in the exploration of the biology of memory are bound to have their impact upon education. Clearly, the more we understand about a student and his properties as a learner, the more effectively he can be taught. Unfortunately, today's classrooms are not run according to knowledge about the nature of memory and learning. Educators generally assume that such information is irrelevant despite the fact that memory is one of the most important aspects of a child's learning. One of the few contributions accepted by educators from psychology has been the IQ test. This is not used as it should be, for diagnostic purposes. This test attempts to say something about the child as a learner and to predict something about the child's capacity to learn. But the current use of IQ tests reminds one of a physician who examines his patient and says, "You have a very bad liver and you are likely to die an early death. Very interesting, you have 3 days to live."

In a very crude sense, the IQ test appears to measure some adaptability that is biologically based. Many deficiencies as well as talents are biologically based. Some are metabolic, like phenylketonuria, which can be counteracted by a diet starting at birth. If it is not corrected, the defect leads to mental retardation. Biological variations of normal intelligence and learning are not presently analyzed and used for the purposes of education. Where there is strong evidence that family resemblances and intelligence have a genetic basis, general notions of intelligence are useless. There are diverse reasons why a person may be a good or a poor learner. For example, a child's learning efficiency depends on many different processes. He might be a poor learner because he has a deficiency in several systems of storage and retrieval. He might have no short-term memory or he may not be able to retrieve information. Some people have good immediate memory but have lost the ability to memorize; that is, to learn any new material and store it for any length of time.

Dr. Brenda Milner of the Montreal Neurological Institute has studied memory in patients with brain damage in both temporal lobes. Often these people seem to be quite normal and their IQ scores are unaffected. Some of them have completely lost the ability to acquire and retain new information. For instance, one man had suffered brain damage 10 years ago. While in many respects he seems normal, his family moved and he never was able to learn the address of his new house. He does the same jigsaw puzzles day after day without ever showing any effect from practice. He reads the same magazine over and over again, but doesn't find the contents familiar. This type of amnesia has proved to be very helpful in understanding various aspects of memory. Some of the problems of school children may stem from kinds of memory-retrieval defects that normal school techniques never overcome.

As Dr. Millard Madsen of UCLA has shown, high IQ and low IQ children can be induced to learn at about the same rate under the appropriate conditions. Under the usual schoolroom conditions, the children with high IQ's seem to learn much faster. However, if the low IQ children are permitted a longer interval between the introduction of new information, they learn at about the same rate as the high IQ children. Thus, rearranging the school environment to meet the individual's needs can eliminate the differences predicted by IQ scores. The role of our present diagnostic tests, such as the IQ test, should allow us to find out what information-storing process is deficient and how to compensate for it.

The day of the memory pill is not quite here, but it is coming soon. In the future it may be just as common to give Johnny his pill when he leaves the house as it is to remind him to brush his teeth and to put on his glasses.

The relation between long-term memory and the intervals between training, the influence of shock, of drugs, may indeed revolutionize the intellectual capacity of humankind. We may also learn how biological rhythms enhance or detract from learning and may schedule learning for the optimum time of day. We may learn how to counteract memory deficiencies with drugs—thus opening the doors for almost half of mankind more fully to realize their potential. Children may receive a more compact and rich education when we begin to respond to the way they learn. For the elderly, too, the advent of memory drugs may prolong the philosophical years of intellectual activity now curtailed by poor memory.

THE RE-EDUCATION OF CRIMINALS

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Introduction and Summary of Findings

In a sparsely settled agricultural area 25 miles north of Montgomery, Ala., lies a unit of the State's prison system known as Draper Correctional Center. There, some 800 men, more than half of them in their twenties or late teens, are serving sentences ranging up to life for crimes ranging up to murder.

Under the Alabama parole system, an offender is usually considered for parole when he has completed one-third of his term. (Inmates joke about one of their fellows who is serving three life sentences that run consecutively. "When he gets through the first one," the joke goes, "they are going to have a — of a time getting him through the next two." Actually he has served several years and can expect a chance to prove himself in the outside world in a dozen more.) The parole system helps an offender to get a job; it requires, in fact, that he have a job, or an assured place in school, before he is released. And it tries to keep track of him and to counsel him. Nevertheless, it is estimated that from 65 to 70 percent of the general run of parolees fall into criminal ways again and find themselves back in prison.

Among a special group of inmates, however, in a project given impetus by an NIMH grant, a preliminary followup indicates that only about 30 percent of those released have had to come back.

That dramatic cut in the recidivism rate appears to have been achieved, in great part at least, by applying principles of behavioral science to specific educational and social problems of inmates. The basic tool has been programed instruction, under which a person proceeds at his own pace through a given subject, whether it be writing grammatical sentences or building good relations on the job, and wins rewards as he goes along. The project is conducted by a private nonprofit organization, the Rehabilitation Research Foundation, chartered by the State to develop and administer programs of research and training in human development. Offices and most classrooms, all within the gates at Draper, are in a warehouse-type brick building that once served the prison as a cotton mill.

Dr. John M. McKee, the psychologist who conceived the program and who, as executive director of the Foundation, administers it, points out that the participants have been volunteers, so presumably they have been more highly motivated than the nonparticipants to improve themselves and to make good in the outside world. Offsetting this at least to some extent, he believes that many and perhaps most of the students originally wanted only to escape work on the prison farm, or at maintenance jobs, or in the laundry, which serves the entire State prison system.

Besides willingness to volunteer, prospective students usually have had to demonstrate a sixth-grade level of education, which was considered essential if they were to benefit from either academic or vocational training. Beginning in 1968, however, applicants below this level have been accepted and given 20 weeks of individual and group instruction directed toward fitting them for an occupational course. Applicants' criminal records (except in the case of rapists, who were ruled ineligible by the State Board of Corrections because there are women on the Foundation's staff) and their records of behavior in the institution have not in themselves affected admissibility. But priority has gone to men having a reasonable chance of being paroled soon after completion of training.

Doctor McKee traces the genesis of the Draper project to 1959, when he was one of a group of psychologists who dreamed of establishing a center for research in behavior, with emphasis on the application of learning theory. The psychologists were staff members of the Division of Mental Hygiene of the Alabama State Department of Health; their behavior center would be part of the University of Alabama, and one of its many possible research studies would deal with inmates of Alabama prisons. When the group was unable to raise the necessary funds for the whole program, Doctor McKee decided to see what he could do with the correctional project. He felt certain, after several years of directing mental hygiene work in the State's prison system, that if you wanted to pry a man loose from antisocial activities, you had to show him how to become and—more important, to get him to believe that he could become—a self-respecting member of society. Programed instruction, Doctor McKee believed, offered a highly promising way of meeting these requirements.

Draper's warden, John C. Watkins, who had majored in sociology at the University of Alabama and then completed course work for a master's degree from Auburn University, strongly encouraged Doctor McKee and offered to make Draper available as an experimental center if Alabama's Commissioner of Corrections approved. A. Frank Lee, the commissioner, not only approved but also scraped together $3,000 to help finance a trial run of McKee's idea. ("We sold the commissioner," McKee recalls, "by giving him a little programed sequence that quickly taught him how to multiply in his head certain 2-digit numbers by other 2-digit numbers.")

That was in 1961. The following year, NIMH made a grant to expand the work and analyze the results. Institute support, which continued into 1969, went mainly to develop, test, and apply self-instructional programs in the academic and personal-relations fields. The findings were so promising that in 1964 the Office of Education and the Department of Labor granted funds, under the Manpower Development and Training Act (MDTA), to enroll more inmates and to add vocational subjects. Work programs under the NIMH and MDTA grants have complemented each other.

For the most part, enrollees now spend 8 hours a day in the program. There is considerable variation in how these hours are apportioned. The student whose aim is a high school equivalency certificate, for example, will spend most of his time in academic work. Typically, though, two of the hours are given to basic education courses, including English, remedial reading, and arithmetic, and the rest to vocational training—in the classroom for theory and in the shop for practices. Vocational courses include welding, repair of electrical appliances (including air conditioning and refrigeration systems), barbering, sign writing, and work in an automobile service station.

Among the regular staff members, in addition to Doctor McKee, are Donna M. Seay, a vocational educator who serves as the Foundation's assistant director; four learning managers or supervisors, who in a conventional educational system would be called teachers; five vocational instructors; and three counselors, for guidance to men in the program, for job placement, and for followup.

The staff is augmented by the so-called college corps—junior and senior college students, majoring in sociology, psychology, or education, who join the regular staff during summer vacations or for part of a semester during the school year. Some 50 corpsmen from a dozen colleges and universities in Alabama and neighboring States have worked at Draper, three or four at any given time. They have served as counselors, as aides to the regular instructors, and, perhaps most important, as "peer models"—examples of the fact that a young man can do something worthwhile with his life. "With encouragement from the corpsmen," Doctor McKee reports, "many inmates came to believe for the first time that their lives counted and that they too, could succeed."

About five "service" corpsmen also are on duty, mainly as assistants to the instructors. They are relatively well-educated inmates who have shown special interest in the project and the desire and ability to work with members of the regular staff and with fellow inmates.

Augmenting the academic and vocational work, the project has set up:

1. *A reading laboratory*, which evaluates and provides help for each student who seems deficient in reading skills. Some of the work—notably, rate-comprehension exercises presented by a variable-speed film projector—is done in groups, but most of it is individual. Each student receives a kit that contains stories and self-graded tests on the content of the stories. Vocabularies are developed through other self-graded exercises. Students are encouraged to spend at least an hour a day outside the laboratory reading any library book of their choice, provided it is not far below their known level of ability.

2. *A seminar program*, which provides the group interaction not present in the programed instruction courses. Group discussion, or seminars, have dealt so far with English composition, poetry appreciation, human behavior, great books, creative writing, and current events. Most of the leaders have been volunteers from Montgomery recruited by Doctor McKee because of their interest in the subject matter. The program has been so successful in awakening and expanding the prisoners' interests that it will be continued and broadened.

About 100 inmates were enrolled in the Draper project as of mid-1969, bringing the grand total of participants—including a number in the early years who were involved for only short periods—to almost 2,000. Better than 40 percent of the current enrollees are Negroes, a proportion that has more than doubled since the start of the program. Two-thirds of the institution's population is white.

Doctor McKee reports the following major findings, most of them based on a followup of 228 graduates of the vocational training program (out of 290 who had been released) from 1 to 3 years after they had left Draper.

- Sixty-eight percent of those released—most of them by parole, the others by completion of their terms—were still free. Of the other 32 percent, almost half had been returned to Draper for technical violations, such as failure to keep in touch with parole authorities, or consorting with known criminals, while the rest had been picked up for new felonies or misdemeanors. This contrasts with the pretraining record of these men: fully 70 percent had been recidivists and only 30 percent had been first offenders. For the State as a whole the recidivism rate was estimated at between 50 and 70 percent.

- Of the 288 men in the followup, about 80 percent had initially gone into jobs directly related to their training and another 10 percent had gone into such jobs later on. The number of employers who hired graduates reached 361, since some graduates changed jobs several times. Two-thirds of those released got jobs through the efforts of the program's job development and placement officers. Only a few graduates—eight out of the 187 for whom this information was available—performed unsatisfactorily in their first jobs.

- The average income of the trainees who have been released—based on follow-up data from 150—is $3,640 a year. Each man pays an estimated average of $546 a year in taxes. Moreover, the public has been relieved of the burden of maintaining the man in prison, estimated at $1200 per man per year.
- After 200 hours of programed instruction, students have shown an average gain in educational level of 1.4 grades. When this instruction was coupled with a reading improvement course, the gain was 2.5 grades.
- In the hope of getting a certificate of high school equivalency, 178 students have taken the State's General Education Development tests, and all except nine have passed the tests and received the certificate. These students typically had been at the seventh grade level or even below in at least some of their subjects when they enrolled. (Incidentally, evidence of the cash value of a high school education was turned up by a 1967 study of one group of former inmates. Men who had earned a certificate of high school equivalency during their imprisonment were making an average of $349.30 a month; the others were making $279. As compared with pre-imprisonment earnings, the high school equivalency group had added more than $140 a month; the others, less than $40.)
- Thirteen students were accepted by colleges while they were still inmates, and entered the colleges upon parole. Three of these have graduated; the others are still in college. Most of the students have received help from a scholarship loan fund called PACE (Program for Achievement of a College Education), which the Foundation administers. The fund was started in 1962 when the inmates who had taken part in one of the early programed instruction experiments, for which they were paid, donated their earnings to establish it. Since then it has been supported by gifts from outside. Loans to college students, graduates of the Draper program, have ranged from $40 to over $2,000. The fund has had to turn down some requests and meet others only in small part.

To disseminate information about its accomplishments and methods, the Foundation has held four conferences—in Montgomery, Houston (with the University of Houston as cosponsor), New York City (with the Staten Island Mental Health Center as cosponsor), and Berkeley, Calif. (with the University of California as cosponsor). Each was attended by more than 100 persons from correctional institutions, pardon and parole boards, State employment services, State manpower development and training programs, and vocational rehabilitation agencies. More than 2,000 persons have visited the project for first-hand information. A manuel on Draper's training methods has been prepared.

Correctional institutions in a number of States—including California, Florida, Georgia, Illinois, Indiana, Nevada, Oklahoma, South Carolina, and Tennessee—have adopted some part of the Draper program, and others have expressed interest in doing so. For lack of funds, Doctor McKee reports, Alabama has not yet been able to extend the program beyond Draper.

Programed Instruction

At the basis of the program is learning theory, or reinforcement theory, which says that if desirable behavior is rewarded and undesirable behavior ignored or punished, a person's behavior will eventually be modified in the desired direction.

"There is no substitute in this world for competence," says Doctor McKee. "And that is what these trainees have lacked all their lives—a feeling of competence. They have failed in every major task they have undertaken, perhaps with good reason: the family may have failed them, or the school. As the warden says, they have even failed in crime, or they wouldn't be here."

Programed instruction, or P.I., is intended to substitute success for failure. As defined by Doctor McKee, it is "an attempt to systematically apply basic principles of learning theory to an individual learning situation." Subject matter is said to be programed when:

1. Its training objectives are behavioral: that is, the learner will be able to *do* something specific.

2. Material is presented in a logical sequence of steps—called *frames* or *exercises*—each small enough to be easily learned.

3. The student is required to respond actively to each step; that is, he is asked to apply information or exercise skills immediately after they are introduced.

4. The learner receives immediate feedback; that is, he is told at once that he is right or wrong. In good P.I. he is almost always right. This explains the behavior-shaping power of P.I., says Doctor McKee, because the knowledge that a response is right is reinforcing to the student: he is encouraged to go ahead. If he is wrong, he is told why and may be referred to a section that helps him over the difficult part. He is asked to correct his answer; then he is moved forward in the program.

A course on sentence structure, for instance, begins by defining *subject* and *predicate* and giving examples. Then it offers a few simple sentences and asks the student to pick out the subject and predicates.

It tells him the answers. If he has been right, he goes on to more complex sentences; if wrong, he reviews the definitions and corrects his mistakes before going ahead.

One series of lessons teaches personal hygiene as an important factor in getting and holding a job. Other lessons try to teach desirable work habits and customer-relations attitudes. Here is one unit, or frame, from the customer-relations course for automobile station workers:

> *Make the first move count.*—J. Q. Customer drives into your shop. This is his first visit, and he feels a bit wary. The longer he is left waiting, the more doubtful he becomes. He may even decide that you're not interested in his business and leave.
>
> * * * But no! You're on your toes! You see that no one has made a move to help him. At that particular moment you cannot leave your work, so you call out, "Good morning, sir! Someone will be with you in a moment." He at least knows now that someone is aware of his presence and is hurrying to assist him. The sooner you can approach him, the better.
>
> Put a check mark by the following statements that are *true*:
>
> 1. Most customers don't mind waiting. ____
> 2. If the customer is kept waiting too long, he may leave. ____
> 3. You should approach the customer as soon as possible. ____
> 4. Keep the customer waiting for a while to show him how hard everyone is working. ____
> 5. If it is not possible to approach the customer immediately, tell him that someone will be with him as soon as possible. ____
>
> You scored 100 percent if you checked numbers 2, 3, and 5. You realized that most people do not appreciate being kept waiting. Time is important to all of us, and no one likes his time to be wasted. Too, a customer will be more impressed with your attention to *his* needs than he will be with your efforts to fix someone else's car!
>
> If you checked a wrong answer or failed to check the correct answer, go back and correct your answer before continuing.

In the Draper project, a learning area replaces the usual classroom. It is a room with rows of stalls or cubicles, like those found in college library stacks, so that each student has his own, compartmentalized, study space. A dozen or 15 students work in the same area under the eye of a learning manager or supervisor, but no two students are likely to be engaged on the same subject. The supervisor answers questions, offers encouragement, and keeps records.

Programed instruction makes it easy to work with a person at several levels, depending on his need. One student, for example, is relatively far advanced in English, so he is studying it at the eighth grade level. Since he is extremely weak in arithmetic, however, he studies that subject at the fifth grade level.

P.I. materials come either in text form or for use in teaching machines. The machines have advantages. They can automatically skip over material that the student's responses show he already knows, and they can present extra practice sequences when the response indicates these are needed. Further, they can control cheating and can tabulate the number of correct and incorrect responses, thus easing the supervisor's job. The Draper project uses them to some extent but, largely in the interest of economy, has relied mainly on texts, or "software," and feels the results have been good.

In the beginning, the available P.I. courses covered only a few subjects and often lacked what Doctor McKee considered a necessity: self-administered tests that evaluated the subject's knowledge at the start, at various points along the way, and at the end. So the project set to work to develop materials of its own. Some 30 Draper-tested courses covering aspects of such basic subjects as grammar and mathematics, such vocational subjects as electronics, welding, auto mechanics, and bricklaying, and such social relations areas as applying for a job, good job habits, and table manners have resulted; they are on sale through the University of Alabama.

The development of its own courses went hand in hand with the use of existing ones. One of these, used purely because it did exist, was Russian language for beginners. But could this possibly have any value to prison inmates? "Yes indeed, it could and did." answers McKee. "The fellows who took it went back and spouted off a few words in Russian to one another. And when the others asked 'What's that?', our boys said, 'If you went to The School, you'd find out.' Their new knowledge gave them prestige, and that's important."

Some of the students began programing on their own. One day, a few months after the project began, two inmates—call them Ted Jones and Bill Smith—came to McKee and said, "Hello, Doc, take a look at this." McKee looked and saw a sheaf of handwritten instructions and diagrams entitled "A Programed Course in Fingering Movements on the Trumpet. By Ted Jones and Bill Smith." It had 1,164 frames. Leafing through it, McKee remarked, "Gee, I believe I could take this course and learn to play the trumpet. It even teaches you how to blow through the trumpet. You blow as if you were going to spit a piece of tobacco off your tongue."

"Well," Ted Jones answered, "if you are as smart as the four men we've already put through the program to test it, and at the end could play those three tunes—yeah, if you are as smart as they are, you could learn to play those tunes, too."

"Another year and a day for you," McKee joked back, and went on to encourage Ted and Bill to continue their work, which they did, writing lessons for the clarinet and saxophone and a basic course in music notation. (One of the musicians is now in college; the other has been returned to Draper for a parole violation.)

Over the years other inmates have developed courses in personal grooming, etiquette, parts of speech, improving the memory, orientation for new prisoners, and other subjects. One man who was studying technical writing signed up for a half-year course in welding just so he could program lessons in the theory of it. The course in technical writing, incidentally, was dropped after a few years because employers shied away from hiring its graduates. But the welding lessons, like most of the other courses developed by inmates, have become part of the Draper curriculum.

Meanwhile the commercial production of P.I. materials has boomed to such an extent that hundreds of courses are available. The problem at Draper is no longer to develop new courses but to select from the most promising ones at hand. One new program, though, is definitely planned. It will be written with the aid of offenders—in particular, successful and unsuccessful parolees—and it will teach *how to succeed on parole.*

Reinforcement

Although programed instruction has its own built-in reinforcement—the lift one gets from finding that an answer is correct (or, if it isn't correct, from learning what was wrong and from being encouraged to go ahead)—the staff at Draper found that the typical inmate got bored after a few weeks. So it has employed a number of tangible rewards to create a motivating environment. For instance, students who complete a course are given points, and enough points win them a Certificate of Achievement. Along with written recommendations, these certificates provide a strong basis for favorable parole consideration. Many former inmates have reported that the certificates also helped them to get jobs.

Now undergoing trial is a "contingency management" plan under which a student contracts at the end of each day's classroom work to complete a certain number of frames the next day. A frame comprises one question and one answer in a programed instruction course. A contract is an agreement, recorded on a form, between the student and the supervisor. The student is free to specify the number of frames he will do provided this is at least equal to his accomplishment during the baseline period at the beginning of the course. The student also agrees to take the tests assigned by the supervisor at the appropriate points in the course. And student and supervisor agree that upon completion of a certain number of frames or of a test the student will be free to take a 15-minute break. (The amount of work to be completed before a break depends upon the total amount for the day as specified in the contract.) The agreement makes it possible for each student to average one break an hour.

The breaks are taken in a room—the "reinforcing event" area—fitted out with a coffeemaker and supplies, newspapers, books, magazines, letter-writing materials, shoe-shining equipment, crossword puzzles, playing cards, checker and chess sets, and a radio.

An experiment that preceded the adoption of this plan involved 16 students. First they worked through a 3-week baseline period having two scheduled breaks per day. Then came 4 weeks managed by the experimenter. During the first two of these weeks he set the performance level at 20 percent higher than the baseline average; during the last 2 weeks, he raised it another 20 percent. Most students achieved these increases.

Then came 2 weeks of self-management, with the students themselves at the end of each day setting the amount of work they would do the following day. In almost every case they agreed to work and did work faster than during the second phase, when the experimenter was calling the pace. Frames completed per hour averaged 61 during the baseline period, 101 during the experimenter-managed period, and 125 during the self-management period.

These increases in work per hour were accompanied by a decrease in the number of hours worked. During the second and third periods, the students were permitted to leave the study area when they had completed the stipulated or agreed-upon number of frames and the appropriate tests. They could go back to the dormitory and rest, work out in the gym, talk to friends, or engage in other free-time activities. Consequently, the number of hours worked per day dropped from slightly more than 5 in the baseline period, to 4.35 in the experimenter-managed period, to 3.4 in the self-management phase. But the total work completed rose from 320 frames in the baseline period, to 405, to 435. The increase in frames completed did not adversely affect test performance.

In sum, the experiment indicates:

1. The knowledge that a reward is waiting spurs students on. This is so whether the work to be done is set by the experimenter or by the student. But when it is set by the student, productivity seems to increase still further.

2. In many cases, permission to leave the experimental area at the completion of the performance contract for the day acted as a more powerful reinforcer than the immediate reward—one or more of the activities available during the 15-minute-break periods. After students were told, part way through the experiment, that they might continue to study rather than take an earned break, the group as a whole chose continued work as often as it chose immediate relaxation.

In addition to the built-in reinforcement of programed instruction and the extrinsic, tangible rewards offered at Draper, something else is at work. In the process of learning to be a student, Doctor McKee observes, a man learns to enjoy certain intellectual pursuits. He reads the newspapers, he picks up a book, he listens to the news on TV, he carries on an intellectual conversation—his whole world is changing and opening up. He is going from such reinforcers as a party, free time, and points toward a certificate to find intrinsic rewards in the subject matter itself and in the process of his development. This is theory, but you see it working in the lives of all of us.

The attitude adopted by the staff is also a motivating factor, Doctor McKee believes. "We attempt to be firm but not punitive," he says, "helping but not totally permissive, and flexible but not vacillating. By employing positive rather than negative reinforcement whenever possible, an atmosphere has been created that is much different from the hostile, punitive one expected by most inmates."

As an example, he cites his own behavior when he helps administer a test for a high school equivalency certificate. It's a long test, dragging on for several hours. Since the typical inmate's span of attention is short, and since McKee knows from experience that the inmate may say "The — with it" and walk off, the director keeps coming back and showing interest. "How are you doing—any problems?" he'll ask. "I don't tell him any answers," McKee says, "but I get him to say, 'Well, yeah, this part I just took,' or something like that. And I say, 'Well, let me see,' and look at the part and say, 'Yes, you've got some tough questions there. Better go back over what you've been reading and writing to make sure you've got the right answers. I'll be back.' " What I'm trying to do is to maintain alert behavior—keep them sticking with the job and not bugging out.

"That's what they've been doing all their lives—bugging out, escaping. And strangely enough, this escape behavior has been reinforced. Rob a house, forge a check, steal a car—and run away. Girl friend squeezing you in? The job getting you down? Run away.

"Even people in correctional work have been reinforcing such behavior. An inmate will get tired of the work he's been assigned to. Or he'll get tired of the person he's working with. So he starts manipulating a change. He'll tell the classification officer: 'I'm bugging out of this. I need a different job. My supervisor's down on me—I don't know why.' And he'll keep trying and after a while he'll get his change."

From staff interviews with prospective students, McKee suspects that a large proportion of the inmates who volunteered for school were simply running away once again. But he accepted them because in his project there is nowhere to run to, except back to the job they escaped from.

A "Second Language"

Doctor McKee emphasizes that with prisoners—and probably any other population, for that matter—programed instruction has to be supplemented by discussion groups and sometimes by individual counseling or teacher-student conferences. The inescapable inadequacy of many P.I. courses, standing by themselves, was brought home to him one day a few years ago when he congratulated a trainee on having made the extraordinarily high grade of 96 in a high-school-level grammar course. The trainee gave a deprecatory smile in response and said: "This here English, Doc, don't give me no trouble nohow." Like many other students, he had learned the rules but wasn't applying them.

The project then tried the seminar approach—trainees meeting in groups with a teacher and working together at speech modification. This was much more successful. As the trainees listened to one another, they learned to detect errors, which they called to the group's attention.

Now the staff is experimenting with what it calls the "second language" approach; that is, teaching standard English by the oral methods used in teaching a foreign language.

In this approach a man's present speech, no matter how poor by conventional standards, is never criticized. It is the one he has picked up as a child, and it is usually quite effective in meeting his needs to communicate with his usual associates. The trainees are simply told that the school wants to give them the ability to use another kind of speech on appropriate occasions, such as when applying for a job or meeting a girl friend's parents. "We all have different levels of speech," points out Sally Roy, a former public school teacher who is now a research associate with the Draper project. "A child of five will speak to his mother one way, to his friends another, and to his teacher a third. We speak one way to the dog and another to the Mayor. The hope is that the trainees will use this different level we are giving them more and more often and that eventually it will become their usual level."

The project got the idea from St. Mary's Dominican College Business School in New Orleans, a basic education center for the Job Corps. In training Negro, Cajun, and other disadvantaged girls to be secretaries, staff members from Draper found, Dominican College was trying not to correct their language but to give them a new one for use on the job. It called the new language "business speech."

In its second-language experiment, the staff at Draper gives extensive drill work on the most common errors noticed during talks with the trainees—errors exemplified by such sentences as "John and me want to go to town," "He don't know no better," and "They is ready to fight." The trainees hear over and over again, on tape, the correctly spoken version of these and hundreds of other examples. They also listen to themselves at frequent intervals. And there is group work, including mock job interviews, some of it recorded by a videotape machine.

Has any employer said, "I can't take this man because he doesn't talk well enough?"

"It happened in New Orleans," answers Doctor McKee. "People there said, 'We can't take this girl; she doesn't speak right; she'd give us a bad image.' We don't know whether or not it has happened here. But it seems reasonable to suppose that an employer hires a man on the basis of the total image he casts, including his ability and his self-confidence, and that his speech is part of this image. Even an employer who himself says 'He don't' cannot help being impressed by a man who speaks well. Rehabilitation is a cluster of things, including attitude changes. We think that proper speech is part of the cluster. It is not merely that the man who learns what we are calling a second language has acquired a new skill but that he is enhanced by having done so. People look twice at him and think that he is worth more. He himself has a greater feeling of worth and a sense of belonging."

For the Future

Aided by a new grant from the Department of Labor, Doctor McKee expects to continue the program of education and vocational training and to make more extensive and rigorous followups. He hopes to answer these questions, among others:

- What is the most effective type of training program, as measured by work adjustment and recidivism? Can P.I. simulate real work situations, beyond that of a job interview? Can realistic work-stress conditions be simulated and the means of handling them be transferred to actual job conditions following release?
- What specific barriers, particularly those related to employer attitudes, make it more difficult for the offender to find and hold a job?
- Do released convicts who receive "labor mobility" funds (small grants of Federal money to tide them over until the first paycheck comes in) or Federal bonding assistance, or both, have a better post-release record than those who do not?
- How can an inmate's behavior, not merely during the hours given to the training program but throughout the day, be shaped to conform to desired standards? Involved are (*a*) deciding which kinds of behavior are desirable, because they make for a successful transition from the institution to a job in the community, and which kinds of behavior are undesirable, (*b*) determining the frequency with which each kind

of behavior occurs in the sample of men to be studied, and (c) selecting, applying, and measuring the effectiveness of measures—among them, probably, certain changes in the attitudes of the custodial staff—to encourage one kind of behavior and discourage another. This, then, is a major, long-term experiment in behavior modification and one that is dear to Doctor McKee's heart.

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BIOLOGICAL RHYTHMS AND THE PINEAL GLAND

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Studies led by Doctor Axelrod at the National Institute of Mental Health and by Doctor Wurtman now at the Massachusetts Institute of Technology, are beginning to offer clues to the function of the mysterious pineal gland and its possible effect upon the integration of behavior, pigmentation, sexual development, protein metabolism, and the rhythmic adaptation of the individual to an environment that requires constant anticipation. This unique gland may tell us a good deal about the interrelation between energy metabolism, mood, sleep-waking cycles, sexual maturation and development. The pineal seems to be one of the integrative organs that may control hormones, critical enzymes, and active neurochemicals.

History

Until the mid-1950's the pineal gland was considered uninteresting. In ignorance of its function, physiologists assumed that it had no relevant function excepting as an evolutionary remnant. A leading physiology text of the 1930's summarized the view propounded to students:

> The pineal gland has so far not been proved to have any function in metabolism. It is interesting as a vestigial remnant of a primitive dorsal eye. It has been claimed that its removal in young animals, or destructive pineal tumors in young boys, result in obesity, premature sexual development and early maturity. Feeding of tadpoles with pineal substance rapidly produces pallor due to contraction of the melanophors in the skin.

Until very recently, neurophysiologists had a similarly contemptuous view of glial cells, the small brain cells that surround neurons but which do not themselves transmit messages. When it was discovered that glia had a function in the brain, nourishing nerve cells and perhaps also modulating their firing ability, a whole new dimension of brain research began. A similar change of attitude occurred among physiologists regarding cartilage when it was discovered to have bioelectric properties that are not purely structural. The story of the pineal research follows a similar pattern.

Location

The pineal gland is a small cone of tissue situated very nearly in the middle of the brain, back behind the ears. Its strategic location places it near the spiraling formation of the caudate nucleus, which is a kind of biochemical factory and storehouse of important brain substances. Nearby is the thalamus, a large nucleus—shaped somewhat like a brazil nut—which is critical in relaying messages between body and upper brain. The thalamus may act as a kind of editorial room for brain transmission and seems to play an important role in sleep and many emotional behaviors.

Just beneath and to the side of the pineal lie the double nuclei of the visual system, the lateral geniculate. Adjacent is one of the brain's most complex and important centers for survival: the hypothalamus. It is this complex structure that governs so many controls that maintain life: regulating blood pressure, temperature, pulse, hunger, respiration, hormonal responses to emergencies, and indeed, primitive emotions of rage or of pleasure. Many of the automatic functions that keep us physiologically stable are regulated from the hypothalamus, as are quite a few of the animal reactions that permit us to adapt to quick changes in the world around us. Sexual function and the ability to fight or to flee are among the controls of this important brain region. Until recently these brain regions attracted considerable scientific interest, but their relation to the nearby pineal gland was not considered worth investigating.

Clinical Data

During the mid-1950's, cases of pineal destruction were reviewed in an effort to detect from a literature search how the pineal affected endocrine functions. An underfunctioning pineal gland appeared to advance puberty, while an overactive pineal seemed to delay sexual development. This was not a trivial symptom, as one can easily see in a single case. A boy who showed signs of abnormal pressure within the brain at about age 5 was placed under observation and treated with irradiation at about age 9. By the time he was 14, he showed no abnormal glandular symptoms from any residue of pineal malignancy or from the destruction of the pineal performed by X-ray therapy. However, he showed absolutely no sign of sexual maturation. At 14 a child might be considered "slow," but at 18 a prepubescent state could be a serious detriment to social development and a cause of lifelong difficulties.

Because of the strange correlations between pineal damage and sexual maturation rate, many researchers conjectured that the pineal influences gonadal activity by means of some intermediate hormone. Perhaps the function of the pineal hormone is inhibitory, acting indirectly as a kind of "stop" signal. The nature of such a hormone and its possible mode of action was first suggested by the work of Doctors Axelrod and Wurtman.

The Discovery of Melatonin

In 1959, Dr. Aaron Lerner and his associates at Yale isolated an unusual substance from pineal tissue, one that has been widely discussed ever since—melatonin. The discovery of melatonin had been strangely motivated.

In 1917, it had been observed that pineal tissue rapidly blanched the skin of a tadpole or frog. Something in pineal tissue exerted a powerful influence upon the pigment granules in skin. Perhaps this was a substance responsible for skin discolorations and blemishes. In 1959, the skin-blanching substance in pineal tissue was isolated and identified. Because of its influence upon melanin, which darkens our pigmentation, the newly discovered compound was called melatonin.

Melatonin is a complex molecule. It is related to a chemical family known as indoles, which have considerable influence upon brain function. A more familiar molecule with indole structure is serotonin. Serotonin is sometimes called a brain hormone and a neurotransmitter. A great deal of the body's serotonin is concentrated in the intestines and blood. Serotonin is presumed to be important in stimulating the action of smooth muscle, making possible the muscular contractions involved in digestion. Drugs that interfere with serotonin can have a profound effect upon sleep and behavior. Quite a few researchers have postulated that interference with serotonin may be a factor in psychosis and in mental retardation.

It was by an unexpected route that Doctor Axelrod and his associates first discovered the connection between serotonin and its cousin, melatonin.

Once the team of scientists at Yale had elucidated the structure of the melatonin, a molecule closely related to serotonin, Doctor Axelrod began wondering what kind of catalyst in the body might produce such a molecule. Biological catalysts—enzymes—are the middlemen of the continuous metabolism we call life. Throughout the body, at all times of day and night, enzymes in great variety are busily breaking down one chemical molecule and transforming it into another. Food, thus, becomes tissue, and tissue performs its functions. Enzymes, the incessant drones, are abundant, but each one is also limited in what it can do. Doctor Axelrod happened to be interested in a particular kind of enzymatic activity. He was interested in the way these enzymes would work in transferring a group of atoms, called the methyl group, to an oxygen atom. Starting from this limited interest, he began a decade of pineal research, for it was the methyl group of melatonin that attracted his attention. What Doctor Axelrod was about to find was the manner in which a relatively inconspicuous brain chemical is manufactured by a relatively ubiquitous neurochemical.

New Molecules from Old: Melatonin from Serotonin

Dr. Axelrod and his associates began their pineal adventure with a search for an O-methylating enzyme. This is the enzyme that would hinge a methyl group to an oxygen atom on a molecule. Since melatonin existed in pineal tissue, this was the only reasonable tissue to search for a melatonin-building enzyme. Accordingly, Doctor Axelrod and his associate Doctor Weissbach took some pineal gland from a cow and incubated it with a form of serotonin (N-Acetylserotonin) and a radioactive substance that contained a methyl group. Soon the radioactive substance had relinquished its methyl group to the N-Acetylserotonin, thereby making the serotonin radioactive and highly identifiable. However, the new compound containing the added methyl group on its oxygen atom was no longer serotonin. As paper chromotography soon divulged, the new substance was melatonin. It was produced by a methylating action on N–Acetylserotonin. This meant that there had to be an enzyme in the cow pineal that could transform serotonin into melatonin.

By a series of experiments, Doctor Axelrod and his associates set out to find this enzyme. Their discovery was an important one. They called the newly detected enzyme hydroxyindole-O-methyl transferase (HIOMT), which described its chemical structure and function. They inevitably wondered whether the enzyme existed throughout the brain and nervous system. After a thoroughgoing assay of body and brain tissues, the answer was startling. This enzyme was found to be *only* in the pineal gland of mammals. (In lower forms of life such as fish and amphibians this enzyme is also present in the eye and the brain.)

The reseachers now wondered whether melatonin production had some function that might be found by comparing the animal species in which it was found. They examined pineal tissues from hens and other birds, from monkeys, rats, and other mammals, and saw that the activity of the melatonin-producing enzyme differed remarkably from species to species. However, in each species the enzyme was exclusively located in the pineal.

At the time this research was in progress at the National Institutes of Health, scientists (the late Dr. Nicholas Giarman and Dr. Wilbur Day) were discovering that the pineal is a great repository of serotonin and other brain amines. Thus the pineal contained the essential ingredients for producing melatonin and perhaps other constituents of endocrine and brain activity.

In 1960 pineal biochemistry and physiology hovered on a threshold. The subject was beginning to attract the interest of biochemists. Here was a gland that secreted a strange substance capable of blanching skin and perhaps influencing sex hormones. This peculiar chemical was the product of an exclusively pineal enzyme which acted upon the important brain hormone, serotonin. Despite some biochemical interest, the curious pineal was a neglected organ, virtually unrecognized by brain researchers and endocrinologists. Indeed, it was a mystery the shape of a small cone, the size of a fingertip, in the middle of the brain. Nobody had any inkling what function it might perform.

At this point, circumstance brought about a fortunate scientific collaboration. Axelrod, with his specific interest in the melatonin-producing enzyme, was joined by a young clinician and endocrinologist, Richard Wurtman.

Wurtman was driven by a different interest. In 1960 he had been studying another important family of brain chemicals, the catecholamines. These include adrenaline and noradrenaline, which are major substances in neural transmission, in the regulations of moods, and presumably of some importance in governing the way in which the nervous system controls the output and use of hormones. Less than a decade ago, as pineal biochemistry began, the organ itself was considered vestigial and was underrated even by those who were about to discover its importance.

"When I went to work with Axelrod," Wurtman recalled, "I thought it would be worthwhile to find out what it was in pineal extract that retards ovarian maturation. When pineal extracts were injected into rats, it was found that the animals experienced a delay in ovarian development."

At about this time Dr. Virginia Fiske, a Wellesley College teacher, observed that animals kept in light had smaller pineal glands than those animals exposed to darkness. A number of biologists had obtained evidence that light stimulated the development of the gonads. Was there a relation between pineal function and gonadal development? Was the pineal response perhaps a necessary intermediary in the effects of light on the gonads? While still a medical student at Harvard, Wurtman had done some experiments suggesting that the pineal was a necessary intermediary. In studying this relationship, he and Axelrod were to uncover an important property of the pineal gland, one that had been a stumbling block in prior attempts to deduce its function from case histories of patients. This was the fact that melatonin and serotonin are not at constant levels in the gland, but fluctuating.

Light and Darkness: Pineal Size and Melatonin Production

What biochemical activity in the pineal gland might respond to light? A simple study was designed to answer that question. A group of rats was kept in darkness for 6 days, while another identical group was kept in constant light. Pineals taken from both groups were weighed and assayed for HIOMT activity. The animals kept in light had small pineals and the melatonin-forming enzyme was not very active. However, the rats left in darkness had larger pineals. Darkness also markedly stimulated the enzyme that produced malatonin.

Other enzymes were also found in pineal tissue. One was monoamine oxidase, which destroys noradrenaline and other catecholamines. Researchers concerned with depression have long thought that the activity of this enzyme could be harnessed to influence moods. Agents that block its action (MAO inhibitors) have become part of the drug therapy used to improve the moods of depressed people. Despite the influence of light and dark on HIOMT, the melatonin-producing enzyme, monoamine oxidase, was no different in the pineal tissue of light-exposed rats than in the pineals of dark-exposed rats. Light and darkness seemed to exert their effects specifically upon the melatonin system.

Light, Dark, and Melatonin Production in Diurnal Animals

The rat is a nocturnal animal, one who generally rests when it is light, and scavenges for food during the hours of darkness. The rats kept in darkness had unusually large pineals. The activity of the melatonin-forming enzyme was doubled when the animal stayed in constant darkness. This enzyme, to be known by its abbreviation HIOMT, converted serotonin into melatonin. The studies of rats had certainly suggested that HIOMT was somehow inhibited by light.

If the pineal were a kind of time-keeping mechanism, one would expect it to show a comparable change in diurnal animals. Would these creatures who act primarily in daylight show the same enzyme phenomenon as the rats? Hens are diurnal, resting in darkness, active by day. In the next study, a group of hens was kept in constant light, while a comparable group lived in constant darkness. The hens who lived in constant light had heavier pineal glands. This suggested that light acted upon the pineal of the diurnal hen the way darkness acted upon the pineal of the nocturnal rat. Indeed, it was the group of hens kept in darkness that showed a decrease in the activity of HIOMT, the melatonin-producing enzyme. In other words, light seemed to act upon HIOMT to increase its activity in diurnal animals, while darkness increased the activity of the enzyme in nocturnal animals.

Since the pineal gland lies buried deep within the brain, one might wonder how light and darkness would impinge upon the gland. Surely, if the pineal were a kind of biological synchronizer that keeps an animal in tune with his environment by altering brain chemistry according to day and night, there had to be some way by which light could influence the pineal.

How Light May Influence the Pineal Gland

At first it seemed that light might enter directly through the skull. There is some evidence that light penetrates the skulls of birds and other animals. An implanted photoelectric cell within the brain of a blinded creature, for example, has shown the impact of light; thus the pineal might be directly affected by environmental light.

Another alternative was the possibility that light influences pituitary hormones which, in turn, influence the biochemistry of the pineal. On the other hand, light might come indirectly to the pineal through neural messages.

Doctors Wurtman and Axlerod began a process of elimination. They used groups of animals from whom the ovaries had been removed. This eliminated the possibility that pineal activity was light-mediated through some influence upon sex hormones or reproductive glands. These ovariectomized animals continued to show more HIOMT activity when kept in darkness than when kept in light.

The next stage of elimination was the removal of the pituitary. Then, the pineals were taken from animals kept in darkness and from animals kept in light. Again the melatonin-producing enzyme (HIOMT) showed its greatest activity in the pineals of animals kept in darkness. The pituitary was not the source of information about light and darkness, nor were the gonads.

Next, blinded rats were used. The laboratory schedule exposed the sightless animals to continuous illumination or continuous darkness. Melatonin synthesis in pineals taken from blinded rats no longer showed a biochemical response to environmental light or darkness. HIOMT activity was no different among rats kept in light than among rats kept in darkness. Evidently the light that influenced the pineal must have come through the retina, through the eyes. In what possible way would the deeply buried pineal gland be connected to light-bearing nerves of the visual system?

The optical tract resembles a cable system from the eyes to the back of the head. This major bundle of nerve fibers bears light messages back into the visual portions of the brain. In addition, however, a small bundle of fibers leads from the eyes to another portion of the brain. This latter fiber bundle ends in the lateral hypothalamus; at this point it transmits signals which travel to cell clusters, ganglia, at the upper reaches of the neck in the superior cervical ganglia. This second optic fiber system, whose light messages seem not to be relevant to vision, is known as the inferior accessory optic tract.

If this were the conduit whereby light and dark influenced the pineal, then interruption of the inferior accessory optic tract or the removal of its end points, the superior cervical ganglia, should obliterate the effects of light and dark upon pineal biochemistry. Since the rate of HIOMT activity provided a fine gauge of pineal response to light and dark, this criterion was again used by Doctors Wurtman and Josef Fischer in searching for the pineal's source of light information. Doctor Fischer removed the superior cervical ganglia from rats who were then placed under continuous light or darkness. Pineal tissue showed the same HIOMT activity whether taken from rats in dark or in light. The cervical ganglia had, indeed, been a crucial link in the route of light messages to the pineal.

Evidently light entering through the eyes follows its circuitous route through the inferior accessory optic tract, transmitting impulses to the cervical ganglia in the neck and then somehow to the pineal.

Some 300 years ago the philosopher Descartes proposed that the pineal had a special function in some ways remarkably close to current findings. He imagined that images from the eyes were carried by "strings" to the pineal with its "animal humors." The light stimulus supposedly caused the gland to tilt so that it poured its "humors" down through the hollow centers of "tubes" that nerve fibers were then thought to be. Humors going down the tubelike nerve fibers influenced the muscles, which accordingly contracted or expanded. The notion of the pineal gland as a kind of third eye, or a gland dependent upon the eyes, is an ancient hypothesis. However, the gland does not function the same way in all species.

Birds are quite different from mammals, and pineal function underscores this difference. In recent experiments, Doctor Axelrod colloborated with Dr. Jean K. Lauber and James E. Boyd of the University of Alberta. They performed a systematic study of the effects of light upon melatonin production in chicks. The chicks were reared on a 14-hour day with 10 hours of darkness each night. Some of the chicks were operated upon just 4 days after they hatched. The cervical ganglia were severed from the inferior optic tract. Some of the chicks received a comparably traumatic but sham operation. In this way, the experimenters could be assured that the results were not merely caused by the trauma of surgery. In the sham operations the ganglia were exposed but not removed. Some of the chicks had both eyes removed.

Then, when they were 4 weeks old, all the birds were transferred to a new environment. They experienced either continuous light or continuous darkness. A week and a half later, a reasonably long time in the life of a chick, all the birds were decapitated and the pineal glands were analyzed.

In the previous rat experiments, it had been clear that melatonin production in the pineal was influenced by light from the eyes. Blinded rats living in an alternation of light and dark no longer had pineals in which HIOMT showed a correspondingly rhythmic rise and fall in activity. Blinding had removed the rhythm of enzyme activity.

Chicks did not show the same dependency of pineal rhythm upon the eyes. Blinded chicks living in continuous light showed HIOMT activity as if information about ambient lighting were still entering the brain. The pineal tissue showed melatonin production which was twice that of pineal tissue from chicks living in darkness.

We have all seen evidence that the reproductive cycles of birds must be influenced by light. Why else would farmers try to increase egg production by artificially lighting hen houses? In temperate zones where the ratio of light and darkness is always changing, the steady lengthening or shortening of the day influences the migrations of birds, their gonadal development, their nesting, and laying of eggs. Apparently at least part of this crucial information enters the bird brain through the skull, for pineal activity does not hinge upon light messages received from nerve ends at the cervical ganglia as in mammals. Doctor Axelrod and his associates have speculated that the pineal may be a kind of photoreceptor in the bird brain.

Several hundred years earlier, without the help of corroborating data, Descartes had postulated that the pineal was an unlikely kind of gland. In his way, he anticipated the late 20th century by suggesting that light from the eyes caused direct nervous stimulation of the pineal, which then secreted its hormones. What he conjectured was a totally new endocrine concept—the concept that a gland might act like an electronic transducer, receiving one kind of input and emitting a different kind of output. Other glands are entirely biochemical: the pituitary, thyroid, or adrenals are triggered into production by chemicals in the blood stream. In response to chemical stimulation they secrete hormones into the blood. By contrast, the pineal receives bioelectric neural messages as its trigger for activity and in response it emits chemical neurohormones. Based upon studies on the pineal, Doctor Wurtman proposed a new term to describe organs which convert neural input messages to endocrine output signals; i.e., "neuroendocrine transducers."

In recent exploration, Doctor Axelrod and his collaborators have begun to uncover neural pathways in the brain that may transmit light messages from the cervical ganglia of the neck to the pineal, thus influencing the manufacture of various substances. The pineal contains several chemicals that fluctuate in a rhythmic manner. While searching for the neural pathways that might convey the influence of light and darkness to this deeply buried gland, the National Institute of Mental Health team began to discover other enzymes and biochemicals in the gland.

Serotonin

One of the particular interests of Dr. Solomon Snyder, a participant in some of the research, has been the possible relationship between serotonin in the brain and serious changes of mood and behavior. The tranquilizing drug, reserpine, has been shown to deplete the brain of serotonin. Reserpine has long been used to counteract symptoms of psychosis and, in its raw form of rauwolfia, has probably been an effective tranquilizer for many hundreds of years in India where it was first discovered. Because reserpine subdues the intense symptoms of psychosis and because it also depletes brain serotonin, the biochemists of psychiatry conjectured that serotonin might be a focal point in the brain chemistry underlying schizophrenia.

Serotonin is particularly concentrated in the pineal gland. Recently, histological advances have made it possible to see the compound in tissue, and serotonin-containing neurons have been identified by the use of fluorescent stains and lights. Serotonin and other members of the indole family give off a bright-yellow glow under fluorescent light. This glow showed up in the endings of sympathetic nerves in the pineal, revealing large quantities of stored serotonin.

Serotonin is the ingredient from which melatonin is constructed, but it is far more widely operative in the nervous system than the localized melatonin. It is found in the intestine and blood. Serotonin is also called 5-hydroxytryptamine or 5-HT. This compound is distributed generously throughout animal and plant tissue, in fruits such as bananas, pineapples, and plums, and in nuts and insect venoms. It stimulates smooth muscles and may cause constriction of blood vessels, dilation of skeletal muscles, and complex changes in blood pressure. When injected into volunteer subjects, it has evoked gasping, coughing, and a generalized prickling pain.

An abnormal release of serotonin caused by tumors will be accompanied by flushing, diarrhea, low blood pressure, and other symptoms. Serotonin is continually manufactured in brain and body and is concentrated in nerve cells in lower regions of the brain. Parhaps it acts as a neurotransmitter and is shot between nerve cells across the gaps, synapses, as a chemical messenger in cell to cell communication. The action of 5-HT is still a matter of conjecture.

Hallucinogenic drugs, such as LSD–25, that interfere with normal brain function, resemble serotonin, and this similarity has also caused some researchers to wonder if deranged serotonin metabolism might explain certain psychoses. For about 10 years this provocative idea generated considerable research. Indeed, in the early 1960's, it was found that mentally deficient patients and people with cerebral palsy did show some abnormal 5-HT metabolism. Their urine contained unusually low levels of one of its metabolites.

Serotonin has many effects throughout the body; accordingly, various drugs can be used to block one or more of its influences. Methysergide is a serotonin-blocker that is sometimes prescribed as therapy for migraine headaches. However, it causes side effects, among them nausea, weakness, cramps, and loss of appetite. One side effect is particularly interesting: insomnia. Serotonin has been thought to be of some particular importance in inducing nightly sleep. The administration to cats of parachlorphenylalanine, another serotonin blocker, will cause them to have a sleepless 5 days. One region of sleep-implicated neurons containing serotonin is in the brainstem system near the region of the cervical ganglia. Is there a fluctuation in the pineal supply of serotonin that might be related to the cycle of sleep and waking?

The Serotonin Rhythm

In early 1963, Dr. Snyder, Dr. Axelrod, Dr. Wurtman, and their associates at the National Institute of Mental Health began to focus on pineal serotonin. Because melatonin is constructed out of serotonin, the investigators wondered whether the serotonin rhythm in the pineal would be just opposite that of melatonin. Dr. Wilber Quay of the University of California had shown that in the rat, a nocturnal animal, pineals showed displaced peak serotonin levels of serotonin during the daily light period. Pineal serotonin levels are several times greater at noon than at midnight. Like melatonin synthesis, the serotonin content of the pineal seemed to be influenced by light. However, if darkness appeared to enhance the formation of melatonin, its opposite, constant light, did not enhance serotonin levels. It led to a decrease.

In tracing the serotonin rhythm, the NIMH team compared pineal tissue from rats that had lived in constant light for 6 days with tissue from animals who had spent the time in darkness. They were focusing on the enzyme from which serotonin is constructed—5-hydroxytryptophan decarboxylase (5-HTPD). Biochemists often measure enzyme activity in order to gauge the rate at which an end product is formed, especially when no direct assay exists for the end product. Time and again they had indirectly measured melatonin production by looking at HIOMT activity because there was no direct way to estimate the concentration of melatonin in tissue. Moreover, the production of a substance usually occurs only as fast as the enzyme can work. Thus the enzyme usually limits the rate at which the product is formed. The trick of indirect analysis means using some tissue that contains the enzyme and combining it with a substance that the enzyme is known to attack and transform. The chemist can see how fast the enzyme transforms this target material, and indirectly he can gauge how much of the enzyme he had in his tissue sample.

Tracing the fluctuations of serotonin turned out to be more complicated than just tracking the activity of its enzyme. The enzyme 5-HTPD, which produces serotonin, was high and active in the animals exposed to constant light.

The NIMH team had demonstrated that melatonin production was rhythmic and might be related to the alternation of light and darkness. Melatonin was produced from serotonin. Now they were puzzled by the role of light in the rhythmic rise and fall of serotonin in the pineal. Did the serotonin rhythm depend upon light from the same nerve networks as melatonin?

They began a series of experiments, some of them in parallel with the previous studies of melatonin. They blinded rats and exposed them to a constant light or darkness. Now, under constant light, serotonin-producing enzyme ceased its activity. Light from the eyes was essential. Similarly, when the superior cervical ganglia were excised, cutting the connection between the eye and its nonvisual terminals, the pineal tissue no longer showed a light-enhanced activity in the serotonin-producing enzyme. On the other hand, when rats were left in darkness, the pineal serotonin rhythm persisted, suggesting that this rhythm was driven by an internal "clock."

Guanethidine is a drug that blocks nervous messages in the sympathetic nervous system, possibly by preventing the release of transmitting substances from nerve ends, at the synaptic gaps between them. Since light messages from the eyes are transmitted via the cervical ganglia in the neck, and presumably through the sympathetic nervous system to the pineal, this drug would stop inflow of light information to the pineal by blocking nervous transmission. Indeed, as the researchers anticipated, animals injected with guanethidine or bretylium showed no increase in the activity of the serotonin-building enzyme, 5-HTPD, despite the fact that they were exposed to constant light.

The pineal gland contains an enzyme that metabolizes serotonin and whose activity might be reflected in the disappearance of serotonin. This is a monamine oxidase, usually known by its initials, MAO. Perhaps the rhythm of serotonin levels in the pineal had to be attributed to the combined activities of MAO and 5-HTPD rather than to one of the enzymes alone.

In 1964, Doctors Snyder and Axelrod began a round-the-clock study. Their animals had been living for a week on a schedule of 14 hours of daylight and 10 hours of darkness. Every 4 hours they took pineal tissue for analysis. Even with the help of direct and sensitive assay techniques they could not find any significant changes in 5-HTPD or MAO activity that would differentiate daylight tissue from night tissue. Puzzled, they began to ask what possible steps in serotonin production might be light sensitive and rhythmic.

Serotonin is formed from the common amino acid, tryptophan. This substance is found in most proteins, especially milk and cheese. Could you inject animals with tryptophan or 5-hydroxytryptophan at different times of day and night and perceive differences in the rate at which the amino acids were converted to serotonin? Some rats were injected by day, others by night, but when pineal tissue was assayed for serotonin content, the increases were the same. It didn't matter whether the rats had been injected by light or dark. This experiment yielded no evidence for the influence of light upon serotonin synthesis. In another laboratory, a scientist had meanwhile noticed that the nocturnal fall in the pineal serotonin level was truly precipitous. The level dropped very rapidly once the lights were off. Perhaps serotonin was stored in nerve ends in a bound, unusable form and was released suddenly at night by some signal from the darkness (or absence of light). Perhaps, if this release occurred at nerve ends, some of the "free" serotonin would be destroyed by monoamine oxidase (MAO). In this case, drugs that blocked the action of MAO might also block the serotonin rhythm.

Doctors Snyder and Axelrod treated animals with MAO inhibitors. This did not alter the daytime levels of serotonin. However, these drugs did prevent its nocturnal drop. The scientists inferred that more serotonin was released by sympathetic nerves at night, and this caused the rhythmic variation.

Pineal serotonin fluctuates, rising and falling in a daily rhythm. The effects of blinding suggest that this rhythm is endogenous but synchronized by light and dark—but by what biochemical pathway? Like melatonin, its levels in the pineal seemed to respond to light entering through the eyes, transmitted as nerve messages along the inferior accessory optic tract, which travels along the medial forebrain bundle. But unlike melatonin, its increases and decreases were not explained by enzyme activity. The story was evidently more complex and interesting than anyone could have predicted. Perhaps serotonin followed a circadian rhythm, so named from the Latin "circa dies," about a day. This endogenous rhythm was unaffected by blinding, nor was it driven by light or darkness. The pineal gland thus contained the dark-drive rhythm of serotonin. Did it encompass other rhythms as well?

The pineal gland, like a rich chemical factor, could not be understood without exploration of several other compounds, all of them important in the nervous system. Along with serotonin and melatonin, the pineal contains histamine, dopamine, and noradrenaline.

Noradrenaline

Noradrenaline, often known as norepinephrine among American scientists, is a close relative of adrenaline. Adrenaline is produced in the very center of the adrenal glands, in a region known as the medulla. It is released into the bloodstream at times of emergency with immediate impact upon muscle and upon the release of energy. Adrenaline, as we all know, enables a swift mobilization for "fight or flight." (Adrenaline synthesis has been demonstrated in brain tissues by a number of researchers including Dr. Larissa Pohorhecky of MIT; adrenaline is much less prevalent in the nervous system than is noradrenaline.) The ubiquitous noradrenaline may influence a vast domain of nerve transactions. It acts like a messenger in the tiny gap between one nerve cell and another, the five millionths of an inch known as a synapse. Nerve cells in action fire a chemical molecule from their many branches to cross the synaptic gaps to other cell-receivers, thus interacting with receptor nerve endings. After its brief errand, the chemical messenger quickly vanishes.

There are about 10 billion neurons in the central nervous system of an adult human being. Each of these cells has about a hundred receiving synapses and a hundred projections that terminate on other cells. This astronomical network is the key to all we know as life, our survival functions, feelings, and thought. If neural activity is mediated by the chemical agents released at nerve synapses, what role do these "neurotransmitters" play? Do they merely grease the path for a bioelectric code of impulses? Do they modulate the frequency or limit the extent of nerve firing? However they perform their role, chemicals such as serotonin and noradrenaline have a pervasive effect on the brain and peripheral nervous system, on emotion, on the constriction or dilation of blood vessels, on body and soul.

Noradrenaline is formed from dopa and dopamine, a member of the catecholamine family. Unlike the indole family containing serotonin and melatonin, which glow yellow under fluorescence, the catecholamines can be detected by their green glow. (The story of noradrenaline is complex, and for a summary it is suggested that the reader refer to *Mental Health Program Reports–3*, Norepinephrine I and II, by Antoinette Gattozzi.)

Since the pineal gland is richly endowed with synapses from sympathetic nerves, it was not too surprising to discover that the pineal gland is also rich in noradrenaline. Noradrenaline is stored in the vesicles of nerve endings, little saclike cell containers. The sympathetic nerves may act through noradrenaline, and if so, this chemical has a major influence on the biochemical activity of the pineal gland. If noradrenaline is needed to relay light messages, then indirectly it helps to manufacture melatonin and to alter the gland's level of serotonin.

In 1966, Dr. Richard Wurtman and Dr. Julius Axelrod began to study noradrenaline in the pineals of rats. As they sampled tissue around the clock, they found the pineal content of noradrenaline varied by threefold each 24 hours. The noradrenaline content of pineal tissue was highest at the end of the night, the rat's active period, and reached a nadir at the end of the light period, when the rat was usually still resting.

This rise and fall of noradrenaline in the pineal was striking. Like serotonin and the melatonin-making enzyme, HIOMT, this neurotransmitter showed a cycle that was related to cycles of sympathetic nervous activity. The noradrenaline rhythm of the pineal suggested that entire segments of the sympathetic nervous system must be influenced by the alternation of light and darkness, by time of day.

Noradrenaline seemed to exhibit a diurnal rhythm. In their subsequent experiments, Doctors Wurtman and Axelrod and their associates attempted to find out whether this rhythm was inherent or was directly related to environmental changes such as light and dark. Perhaps noradrenaline levels rose during darkness because it was not being destroyed so rapidly by the enzyme MAO. Perhaps, on the other hand, it was being produced more rapidly. Rats are nocturnal animals, and darkness may stimulate certain kinds of nervous activity and biochemical production.

Once more a series of careful and delicate surgeries was necessary to prepare experimental animals for the test. One group of rats was blinded. Another group had similar surgery in such a way that it did not interfere with their vision. Sham operations have been used by the investigators whenever they needed a control group that had undergone the same trauma as the other animals but not the functional defect. This eliminates the possibility that the results stem from surgery alone.

Blinded and sham-operated rats were kept for 5 days in a normal alternation of daylight and darkness. They were then killed at different hours of the day and the pineals were analyzed. The sham-operated animals, controls, showed the highest levels of noradrenaline if they had been killed just before the end of the dark period. They showed very little adrenaline at the end of the light period. The blinded animals showed no change in levels of adrenaline, regardless of the time of day their pineals were excised and assayed. It was strong evidence that the 24-hour changes in noradrenaline levels were generated by the alternation of light and dark. When intact rats were kept under 12-hour alternation of light and dark, the pineal noradrenaline was three times higher at 7 a.m. than at 7 p.m. However, when rats were kept in constant light or constant darkness there was no rhythmic change.

When animals were kept in a diurnal light schedule and the lighting was suddenly reversed—the noradrenaline rhythm reversed, too. Thus, when it was light from 7 p.m. to 7 a.m., this was the period of a threefold rise in noradrenaline levels, and the peak occurred around 7 p.m.

One-eyed rats, kept in diurnal lighting, continued to show a rise and fall in pineal noradrenaline. But if the pineal was disconnected from its nerve routes to the retina, the noradrenaline rhythm vanished. Thus, surgery in the medial forebrain bundle or at other positions in the inferior accessory optic tract would abolish the 24-hour rhythm of this critical brain amine in the same way it had abolished the rhythm of melatonin and its enzyme producer.

The investigators concluded, after examining the available literature, that light from the retina, traveling along the inferior optic tract through some unknown pathway through the neck, brainstem, and cervical ganglia ultimately transmits through the postganglionic axons to cells of the pineal gland. By many roundabout stations from the eye, light reaches its final destination in some coded form that is presumably nonvisual. Judging from its behavior, the pineal noradrenaline rhythm appears to be controlled by light.

Noradrenaline and Serotonin—Are Their Rhythms Related?

Doctor Wurtman began to speculate that the 24-hour rhythm of noradrenaline reflected a response to darkness which might "drive" the other pineal rhythms of melatonin and serotonin. Since there is a 24-hour noradrenaline rhythm in the salivary gland, might it fluctuate rhythmically throughout body tissue? If so, the body's response to certain drugs would depend upon the time of day they were received.

Doctor Wurtman and Dr. Donald Reis of Cornell University began a survey of the central nervous system to see whether there was a 24-hour rhythm in noradrenaline content within other tissue. They used cats this time, keeping them on a schedule of light between 7 a.m. and 7 p.m. and darkness the remaining 12 hours. The cats were studied for a period of 6 months, during which animals were dissected at different hours of day and night.

There were indeed differences in noradrenaline levels in different parts of the nervous system, depending upon the time of day the tissue was taken. For instance, the upper part of the spinal cord (the cervical region), which is continuous with the brain, showed a 24-hour rhythm in noradrenaline content. Certain parts of the hypothalamus also showed a diurnal variation in levels of this catecholamine. The rhythm was, however, the reverse of the noradrenaline rhythm in the pineal gland: in these regions the highest levels were found at the end of the daily *light* period. They were exactly out of phase with the pineal noradrenaline.

The regions of the hypothalamus that exhibited diurnal periodicity in this neurotransmitter happen to be the regions that control body temperature and glandular activity. Body temperature, brain temperature, and the levels of certain adrenal hormones are known to follow a circadian rhythm—rising and falling about every 24 hours. Perhaps, indeed, noradrenaline is needed to drive these rhythms. Since light entrains the rise of pineal noradrenaline and noradrenaline is so ubiquitously crucial to nervous activity, it may be the intermediary that causes an individual to follow a rhythm of changes each day—in vitality, hunger, alertness, sleepiness, and wakefulness. The world around us is constantly changing, and each day brings an alternation of day and night, so that we may need an internal manager to keep us in synchrony with our environment.

If this is a role of noradrenaline, perhaps one might see it better by determining what the chemical does in the pineal gland. How, indeed, is its rhythm determined at the level of cellular biochemistry?

The Biochemistry of a Transducer: Noradrenaline and Glandular Function

If the last 7 years of pineal research were fiction, they would result in a book as bizzare and unexpected as *Alice in Wonderland.*

Throughout the sympathetic nervous system, nerve endings usually contain a single transmitter chemical. The pineal contains many sympathetic nerve ends, but these terminals contain two transmitter substances, serotonin and noradrenaline. Why does the pineal need two possible transmitters in its nerve endings? Are these the biochemical messengers through which the gland perceives the shift from light to darkness via the lower brain? Are they the transmitters by which the gland informs the rest of the brain of the evermarching on of time to which we are always, if unwittingly, adapting?

It became important to determine whether one or both of the amines (i.e., serotonin and noradrenaline) in pineal sympathetic nerve endings functioned as neurotransmitters bringing information in to the pineal sensory cells. To this purpose Doctor Wurtman began a study with Doctor Axelrod and Dr. Harvey Shein, of McLean Hospital, utilizing a series of organ cultures. Pineal glands were incubated with a radioactive compound (tryptophan) which would be converted into the pineal hormone, melatonin, if noradrenaline was added to the incubation solution. The pineal responded by converting considerably more tryptophan to serotonin. The addition of serotonin produced no such effect. This suggested that noradrenaline is the sympathetic neurotransmitter that controls pineal glandular function. The presence of serotonin in pineal sympathetic nerve endings probably results from the very high concentrations of serotonin in the environment of these neurons.

Melatonin injections have been shown to influence the function of the thyroid glands, to alter the size of the adrenal glands, to modify electroencephalographic tracings, and to induce sleep. Melatonin appears to have the ability to do something that serotonin cannot do, permeate cells in both body and brain. It can enter the brain in a manner that serotonin cannot, for serotonin does not pass through the blood-brain barrier, that living sieve which protects our brains from bombardment of too-crude molecules. Melatonin seems to be concentrated in the midbrain and hypothalamus, where it may influence sexual function. Noradrenaline, by influencing the production of melatonin, has an indirect influence upon glandular systems and notably on gonadal or ovarian development.

Melatonin may influence the gonads, the thyroid, and adrenals by a primary action on the brain. Dr. Fernando Anton-Tay and Doctor Wurtman have recently suggested this by injecting serotonin intraperitoneally. Brain tissues analyzed 20 to 60 minutes later were found to show the action of melatonin upon serotonin-containing neurons in the brain. This action of melatonin upon serotonin-containing neurons may explain the endocrine effects of melatonin and its effects upon sleep, since brain serotonin is implicated in the control of sleep.

There is a chain of biochemical influence, one of whose consequences may be the alternation of sleep and waking, another the output of various glands, and sexual function. Noradrenaline seems to play a key role in all of these. It influences the synthesis of melatonin, which influences glandular function, which, in turn, influences the amount of available serotonin in the brain. As a crucial link in this chain, noradrenaline has become more interesting than ever. Doctor Wurtman and his associates asked themselves what were the basic cellular origins of the rhythms of noradrenaline and serotonin synthesis.

The circulating precursor of noradrenaline is a dietary amino acid, tyrosine, which is present in protein foods. Doctor Wurtman's laboratory has delved deeply into the metabolism of this amino acid, and especially its rhythmic changes in synthesis and metabolism.

Tyrosine, Tyrosine Transaminase, and Rhythms of the Liver

The concentrations of tyrosine and other amino acids in human blood rise and fall predictably every 24 hours. Tyrosine is only one of many amino acids that we utilize when we convert food proteins into the proteins of body hormones or tissue. Tyrosine happens to be essential for producing melanin, the agent that determines skin color. It is also a component of thyroxine, a basic thyroid hormone that helps to control body metabolism. It is a precursor for the hormone adrenaline in addition to being the primary precursor for noradrenaline. Tyrosine may be used in the process of transforming fats or proteins into sugars for body energy.

Tyrosine transaminase is the enzyme that destroys tyrosine; it changes the amino acid into a precursor of sugar, which cannot be utilized in the synthesis of noradrenaline. As might be expected, this enzyme is found in the liver. By 1966, it was well known that many liver functions, such as the production of glycogen, occurred in a rhythmic manner. Circadian rhythms in liver tissue, in sugar production, suggests that the enzyme manufacturing sugar would also show a roughly 24-hour rhythm. Doctors Wurtman and Axelrod tracked this rhythm in the livers of rats and attempted to find out how the periodicity was controlled.

The nocturnal rat was kept on a schedule of light from 8 a.m. to 8 p.m. and dark the remaining 12 hours. The animals ate very infrequently and rested most of the hours of daylight. During the first half of the day, the liver enzyme showed little activity, but as the day wore on, it slowly increased, reaching a peak about 2 to 4 hours after the onset of darkness, then dropping off throughout the night, the rat's active period. The activity of the liver enzyme is now known to be enhanced by adrenal corticosteroids. Was the rhythm driven by the adrenals? The investigators removed the adrenals from some of the rats, but the cycle of enzyme activity continued. The cyclic rise and fall of liver tyrosine transaminase activity continued even after the removal of the pituitary; hence, the rhythm was not driven by either the adrenals or the pituitary.

Here the findings of Dr. Wurtman at MIT and of Dr. Axelrod at NIMH began to diverge. Dr. Wurtman and his associates found that the enzyme rhythm was imperceptible if the animals did not get protein foods, and demonstrated that the rhythm depended upon a specific amino acid—the protein, tryptophan. At NIMH Dr. Axelrod and Dr. Ira Black found the tyrosine transaminase rhythm to persist when food was withheld for short periods, and suggested that it was linked to noradrenaline.

Doctors Axelrod and Black gave rats reserpine, which depletes noradrenaline, and found that the tyrosine transaminase activity increased. Because reserpine affects serotonin as well as noradrenaline, they repeated their studies using more specific drugs whose influence limits only the synthesis of noradrenaline. Again, as the catecholamine supply diminished, the tyrosine transaminase actively increased.

It has been observed that the peak concentration of noradrenaline in the rat's brainstem occurs at the time when tyrosine transaminase drops to its daily nadir. Are these two related? The diurnal increase of enzyme activity was abolished by increasing the amounts of available noradrenaline, either through giving the rats drugs that prevented it from being destroyed in the normal metabolic process, or by giving them drugs that enhance its manufacture. However the noradrenaline was increased, it abolished the rising activity of tyrosine transaminase, abolishing the rhythm. It is not yet clear how the rhythms of noradrenaline and tyrosine transaminase are related. Perhaps the neurotransmitter noradrenaline acts through neural mediators.

As Doctor Axelrod and his associates have pursued the biochemical relationships between liver and brainstem rhythms, Doctor Wurtman's data has led him into another area, that of nutrition and the rhythmic uptake and use of foods. In studies with Doctors Shoemaker and Larin at MIT, Doctor Wurtman demonstrated that the rhythm of tyrosine transaminase in the rat liver is a consequence of food intake. It was extinguished in rats deprived of protein. When animals were given a food mixture of amino acids containing tryptophan the tyrosine transaminase rhythm resumed. A rise in tryptophan concentration is followed by a rise in enzyme activity. Indeed, a rat is usually eating foods rich in tryptophan during the hours that just precede the daily peak of tyrosine transaminase activity.

The rhythmic activity of liver enzymes may someday serve as guideposts for the administration of drugs, and also perhaps for the efficient use of limited protein foods. These might be eaten in such a way as to maximize the use of all amino acids and minimize the neutralizing action of the liver. With this important implication for mustering world food resources in mind, along with the need to learn more about the metabolizing of drugs, Wurtman and his associates have continued to explore tyrosine transaminase and rhythms of other amino acids in animals and human beings.

In rats, the afternoon rise, the daily rhythm of transaminase activity, appeared to depend upon an intake of protein. Thus the MIT team deduced that the rhythm stems from the rat's tendency to do most of its eating during certain hours and from the presence of protein, particularly tryptophan, in the usual rat diet. The activity rhythms and eating rhythms of rats are, in turn, very much synchronized by the alternation of light and dark. Doctor Wurtman and his associates tried reversing the light schedule on one group of rats and found that both the eating rhythm and the transaminase rhythm soon reversed in synchrony with the new lighting schedule.

Amino Acids and Diagnoses

In human beings, blood levels of amino acids are used for diagnosing certain metabolic diseases. Tyrosine concentrations, for instance, may allow a doctor to distinguish between people with normal and hyperthyroid conditions. Clinicians taking tyrosine levels at 9 a.m. have reported higher concentrations in people with overactive thyroids than among healthy individuals. Such observations were made before it was widely known that tyrosine levels show a daily rise and fall in the blood plasma.

Doctor Wurtman and his associates wondered whether there was a rhythm in human tyrosine levels. If so, were they caused by rhythms in the transamination of the amino acid? Six healthy students were studied at MIT. Their blood was sampled and analyzed while the young men stayed on a special diet. During the 24 hours of assay, the subjects were on a diet containing a normal amount of protein. They were kept in bed for the 7 hours between midnight and 7 a.m. and blood samples were taken at 3- to 5-hour intervals.

The blood analysis showed a rhythm of tyrosine concentration that reaches its high point at about 10 a.m. and its lowest point around 2 to 4 a.m. Exercise had little effect on this rhythm. When two subjects were required to do strenuous exercise for 45 minutes at 4 p.m. (i.e., walking a treadmill), their tyrosine levels went up 8 percent. Although the amount of tyrosine in the blood seems to depend upon the amount of protein one eats, the rhythmic fluctuation in tyrosine levels does not. When eight subjects were put on a very low protein diet for 2 weeks, their levels of plasma tyrosine were extremely low. Nonetheless, its rhythmic rise and fall seemed to persist. The greatest rise in amino acid levels occurred when the men were asleep. Activity, the direct effects of muscular exercise, and the rhythms of activity and rest did not seem to be the source of the rhythm. If human beings resemble rats at all, this rhythm does not depend upon the cyclic output of the adrenal cortex.

Tyrosine is not the only amino acid that shows a rhythmic change in blood concentration. Doctor Wurtman and his associates did a round-the-clock assay of blood in 23 young men at MIT. The students remained at the MIT Clinical Research Center for a full day before the analysis began and were divided into three groups. Each group was given a different diet so that the effect of protein intake might become visible. Some of them ate an ordinary three meals a day, a "house diet" containing about 1.5 grams of protein per kilo of body weight, a roughly average diet. Some of them received a formula diet of egg protein, while others were placed on a very low protein diet. During the next 24 hours, blood samples were taken at 3-hour intervals excepting for the period in which they were allowed an uninterrupted sleep for 6 hours. Blood was analyzed for levels of 16 amino acids at each of the sampling times.

Some variation depended upon the subject's diet, but most of the amino acids appeared to fluctuate in a rhythm similar in phase to tyrosine. Amino acids present in the blood in very small quantities (e.g., methionine, tryptophan, tyrosine) showed rhythms of greater amplitude than amino acids present in large amounts (e.g., glycine, alanine).

The recent amino acid studies clearly imply that a "normal" plasma level depends upon the time of day at which the blood is sampled. All of the plasma amino acids appear to follow a 24-hour rhythm. The rhythm, itself, continues whether or not a person happens to eat a high protein diet. There is some indication that the rhythm is influenced by corticosteroids. In other studies, Dr. Wurtman and his associates were able to shift the peak of the plasma tyrosine rhythm by an injection of the synthetic hormone, dexamethasone. Cortisone, for instance, can depress the plasma tyrosine concentration. Other studies suggest that insulin may influence the plasma rhythms of amino acids.

Several practical implications are manifest in this discovery of amino acid rhythms. Certainly clinicians must revise their notion about the "normal range" of any particular amino acid in the blood. It is mandatory to consider an individual's biological time of day as well as his diet. "Normal" tyrosine levels might be only half as high at 2 a.m. as they would at 10 a.m.

If concentrations of amino acids in the blood limit the amounts of these essential substances in the organs, the availability of critical biochemical may, in turn, limit the rate at which muscles, brain, and other organs can synthesize their needed proteins. The availability of amino acids may indeed determine the fluctuations of such organs as the adrenal in its production of hormones. Thus the rhythm observed in plasma building blocks, may indicate a timesetting at which other biochemical functions in the body can take place. This information may become important in the early and more accurate diagnosis of metabolic diseases and in the administration of drugs.

Doctor Wurtman and his associates, while working on amino acid rhythms in animals and man, have reached conclusions similar to those of their distant and differing colleagues, Doctor Axelrod and his team at NIMH. They have begun to suspect that there must be an overall rhythmic organization in the nervous system, coordinating all of an organism's functions with the outside world.

Given a unified view of biological timeclocks and their broad effects upon brain and body chemistry, and thus also behavior, it is now possible to look forward to relationships in medicine and psychiatry that would have seemed improbable before.

Will an understanding of the pineal gland help to explain why some illnesses of the nervous system show severe symptoms during certain seasons? For instance, is there a reason why people in temperate climates suffer more from ulcers in spring and fall?

A relation between pineal secretion and sex hormones may help to explain famous oddities in medicine, such as of periodic hypertension in a woman whose abnormal increases in blood pressure occurred like waves every 27 days.

If the secretions of the pineal gland indirectly play a "clocking" role in man, as they may in animals, we may begin to ask ourselves whether the manipulation of light and dark, whether our schedules of sleep and waking, and the illumination used during our working lives may not have a pervasive if elusive influence upon our moods and our physiology. Could the manipulation of light become an important element in preventive and therapeutic medicine? Dr. Edmund Dewan and others suggest that it is possible to entrain ovulation-time in women by lighting the bedroom on certain nights. This implies that light can have an impact resembling that of drugs and that it may be a factor to be reckoned with.

During the last two centuries, people in the United States have lived an increasing proportion of their lives in electric light which is "non-physiologic," as Doctor Wurtman says. It does not include all the wavelengths of natural light. Electric light may be deficient, a form of darkness, as far as the brain is concerned.

Many problems still remain to be investigated in biological rhythms. In what area of the brain do these rhythms originate? What is the driving mechanism that makes many biological phenomena fluctuate every 24 hours? When these questions are answered, important advances in biomedical research will be possible.

Intramural: NIMH
Dates of Interviews: October 1968

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WHY ADOLESCENTS KILL THEMSELVES

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Using interviews and psychological tests, the grantee and his associates have compared 50 adolescents after an attempted suicide, with unsuicidal peers of the same age, sex, and background. Although economic privation, broken homes, and disciplinary problems were found in the control group—the sequence and timing of events occurred at a different phase in the development of the child. The profile of the suicidal adolescent includes long-standing problems with family, a stage of escalation during adolescence, and a final stage of alienation—a chain reaction that dissolves the adolescent's closest personal bonds. Given detailed biographical knowledge of an adolescent, this study indicates that it should be possible to pick out the youth in danger, for adolescent suicide is not irrational but over-determined by sequences of life events occurring in critical periods.

> " 'Tis because of us children, too, isn't it, that you can't get a good lodging?"
> "Well, people do object to children sometimes."
> "Then if children make so much trouble, why do people have 'em?"
> "Oh, because it is a law of nature."
> "But we don't ask to be born?"
> * * * "I wish I hadn't been born."
> "He got up and went away into the closet adjoining her room in which a bed had been spread on the floor. There she heard him say, 'If we children were gone ther'd be no trouble at all!' " * * *
>
> "At the back of the door were fixed two hooks for hanging garments, and from these the forms of the two youngest children were suspended by a piece of box-cord round each of their necks, while from a nail a few yards off the body of little Jude was hanging in a similar manner."
>
> —JUDE THE OBSCURE, *Thomas Hardy*.

Background

Adolescent suicide is horrifying, unthinkable, and a little unreal to most adults, for we tend to be complacent about the troubles of the young. To the modern adults, *Romeo and Juliet* may seem only a story. Yet many adolescents cling to one another in similar love, with the desperation of a last hope in a lonely world. A modern Juliet is likely to be a frightened and pregnant little girl: the boy is likely to be rejected, and both may feel totally alone.

Literary descriptions of childhood suicide seem bizarre, yet they resemble modern case histories. In Thomas Hardy's *Jude the Obscure*, the restless wanderings and misery of unmarried parents overcome an unwanted oldest boy. When he hears that yet another unwanted baby is coming, he kills himself and the other children. It is not that such events don't happen, but we are reluctant to believe them.

In 1965, Jacobziner estimated that there were 60,000 attempted suicides among young people under age 20 in the United States each year. Adolescence can be a particularly lonely and difficult period, a time of biological upheaval and social change. A person is expected to emerge from the safety and dependency of childhood into responsible maturity. Even healthy and happy adolescents become moody and oscillate between passions and depressions in a manner that the older people around them rarely understand. Most adolescents have fantasies about killing themselves in moments of rage and frustration or when they feel totally isolated from their families and friends. This is not surprising. Who has not imagined, with some glee, the remorse his parents would feel if he killed himself? Between such imaginings and the act lies the world of pathological events that Doctor Teicher and his associates have begun to define.

Statistics portray great misery among a large population of adolescents. Suicide ranks as the fourth most frequent cause of death for young people 15–19 years old. Fortunately, the vast number of attempted suicides in this age group are thwarted. An estimate of 60,000 suicide attempts a year may seem exaggerated, but hospital admissions offer a convincingly sad picture. In 1960, for instance, at New York's Bellevue Hospital attempted suicide was the reason for admitting 10 percent of the child and adolescent patients. At Kings County Hospital in Brooklyn, 13 out of every 100 children who came to the hospital had attempted or threatened suicide. Each month, the huge Los Angeles County-U.S.C. Medical Center admits about seven patients between 14 and 18 who have attempted to kill themselves; over 80 a year.

The Attempted Suicides

There has been a general tendency to dismiss a suicide attempt in an adolescent as an impulsive act stemming from a temporary crisis or depression. Perhaps it is soothing to believe that someone so young with "life ahead of him" could not have intended to kill himself. He could not have considered that he might die. On the contrary, Doctor Teicher and his associates at the Medical Center of the University of Southern California have found many adolescents who attempted to take their lives more than once. At first they may have used the drastic move as a threat to draw attention to their problems. Instead, it generally made matters worse. After an escalation of long standing problems and loss of any meaningful relations, many concluded that death was really the only solution to unsolvable, unbearable, and chronic problems.

Beginning with Freud around 1920, many keen minds in the development of psychiatry have wrestled with the problem of adolescent suicide, but inferences drawn from a few cases or psychological studies did not indicate how to predict a suicide from outside circumstances. In the fall of 1964, the investigator and his associates began to study the life situations of adolescents who attempted suicide, comparing them with control adolescents matched for age, race, sex, and family income—control adolescents who had never attempted suicide. Quite a few interesting patterns have been drawn from this study of 50 young people who attempted suicide. All were between 14 and 18. None of them was mentally retarded or obviously pregnant. All had been brought into the Los Angeles County-U.S.C. Medical Center sometime between September 1964 and May 1965 because of their suicide attempt.

At least one parent, usually the mother, was studied as well. For comparison there was a control group of 32 youngsters and their parents. Three-quarters of the attempted suicides were girls. On the average the suicidal adolescents were around 16 years old. They were white, Mexican, Negro, Protestant, Catholic, and Jewish.

Procedure: Charts of Life Events

The procedure called for an interview with the adolescent patient within 24 to 48 hours after the suicide attempt. The parent or parents were also interviewed. Then, the suicidal youngster's therapy sessions in the hospital were taped and transcribed for further analysis.

Two biographies were elicited from structured interviews. There was the parent's version of his child's history, and there was the adolescent's version of his own life. On the basis of the case histories, a life history chart was constructed for each suicide attempter and his matched control. This was done by constructing a chronology (in parallel) on a vertical continuum that depicted all the experiences of the adolescent from birth until the suicide attempt. These graphic charts show residential moves, school changes, the beginnings of various behavioral problems, separation, divorce, or remarriage of the parents, and deaths in the family. The charts were put in a sequence that displayed how the events tended to pile up at a particular point in the adolescent's life. This indicated how the crises had accumulated during the adolescent's life.

What events distinguished those who attempted suicide from those who did not? A simple comparison of events in the lives of the control group and the suicide-attempters might not show that there was a very pronounced difference. The investigators discerned a distinct process leading to progressively deeper unhappiness and pessimism. The suicide-attempters went through a sequence that led to progressive isolation from the important people in his life. The control adolescents did not. The process can be summarized in three stages: The suicide-attempters all had a long-standing history of problems from childhood into adolescence. There was also a period in which problems seemed to escalate, usually at the very beginning of adolescence. Moreover, the problems mounted in a manner that seemed to exceed those of peers and friends. Finally, came a phase characterized by a "chain reaction dissolution of any remaining meaningful social relationships." This isolation occurred in the days and weeks preceding the suicide attempt.

Sequential Analysis of Life Events

The advantage of looking at things sequentially can be demonstrated by comparing the two groups. For instance, the life histories of the suicide-attempters showed that 72 percent of them came from broken homes, yet 53 percent of the control group also came from broken homes. Former studies of suicide have emphasized the fact that there were more broken homes among suicide attempters than "control" adolescents. However, none of these studies examined the broken homes of comparison groups. If one looked only at the incidence of broken homes and severed parental relations, there is no great difference between suicidal youths and comparable nonsuicidal youths. However, by looking at the chronological biographies of these two groups, the grantees have seen that the relevance of a broken home depends upon *when* the instability occurred in the child's development.

Critical Phase

Although 72 percent of the suicide-attempters and 53 percent of the control adolescents came from broken homes, the timing of divorce and remarriage was different. In the suicidal group 58 percent of the parents remarried, but only one-fourth of the control parents remarried. Moreover, these control parents managed to remarry very early in the child's life and remained married. The parents of the suicidal adolescent either remarried quite a bit later in his life, or, if they remarried early, they were subsequently divorced and remarried several times again.

The chronological mapping of biographies shows that the suicidal adolescents had parents who were divorced, separated, or remarried after the onset of adolescence. By contrast, the control families experienced change earlier, if at all. Instability in the home apparently had a differential effect depending upon the age of the child. Both groups experienced the instability of a broken home, but the nonsuicidal adolescents had a stable homelife during their last 5 years, while the suicidal youths had experienced instability then. As the investigators have written,[1]

> "This is particularly significant, not only because divorce, separation, or the acquisition of a stepparent is stressful and disruptive event per se, but also because it occurs during a particularly stressful life time in the life cycle, i.e., adolescence."

A great many people who have written about suicide have implied that the loss of a parent in childhood might cause depression and perhaps suicidal feelings later in life. This study would not bear out such a conclusion, since the control group also experienced parental loss in childhood. Perhaps it is not loss of a parent in childhood that predisposes a person to depression and suicide in later life. Loss of a love object, as the grantee has remarked, is an important aspect of the process. But loss must be viewed as a part of the process, and particular attention must be paid to the time when it occurred. Most of the adolescents began their maelstrom descent toward suicide after a long period of alienation from parents. One 14-year-old who had tried to commit suicide twice was asked why. She replied, "It's my mother."[2]

> Asked what her mother did, she answered, "We just don't get along. We haven't for 3 years. Before that we were like sisters and then it seems like since she divorced my stepfather it started a lot of trouble."

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[1] Jacobs, J., and Teicher, J. D. Broken homes and social isolation in attempted suicides of adolescents. "*International Journal of Social Psychiatry*," 13(2) : 146, 1967.

[2] Unpublished transcript.

This girl enjoyed being in the hospital and did not want to return home. It is particularly poignant that she wanted to be committed to a State mental hospital rather than return home. Many of the young suicide attempters described their alienation from parents as a process in which either the mother or father would nag them, would cut them off from their friends, would disapprove of their favorite friends, and thus made it difficult for them to have relationships outside the home, at the same time making life very difficult for them within the home. This was their version.

The Broken Romance

Typically, many of these adolescents had fallen in love and formed very possessive and exclusive romantic relationships. This actually isolated them even more. A girl and boy would concentrate so intensely on one another that they tended to cut off all their friends. Then, if the romance failed, they would feel hopeless, lost and despairing.

At the time of the interviews none of the adolescents in the control group was ending a romance, but a number of the "suicidal adolescents" had just broken a romance. Moreover, five of these girls were either pregnant or feared that they were pregnant. As the biographies revealed, pregnancy inevitably led to a great sense of isolation. These girls withdrew and were rejected by their boyfriends. Usually, they were also rejected by their parents at this time when they most needed support. The suicidal adolescents were really in a state of depression compared with their counterparts, and, indeed, as the grantees point out, this seemed to have been prompted by their real experiences in life.

The Way They Saw It

Only 38 percent of the suicidal youngsters considered their childhood to have been happy. But about 94 percent of the control group considered childhood to have been a happy time for them. In describing the biographies, the investigators wrote:[8]

> "Judging from the verbatim accounts of the suicide-attempters in the interviews as well as the suicide notes left by them, and notes written by other adolescents outside our sample, the decision to suicide was the result of a rational, decision-making process. However, the choice of death is not based on a desire to die. They would, if they could, choose to live. Death, in a sense, is not chosen at all but results from the progressive failure of adaptive techniques to cope with the problems of living, where "the problem"

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[8] Jacobs, J., and Teicher, J. D. Broken homes and social isolation in attempted suicides of adolescents. *"International Journal of Social Psychiatry,"* 13(2): 148, 1967.

is the maintenance of meaningful social relationships. In short, the potential suicide felt he had no choice, i.e., death is necessary. It is from this recognition of necessity that his sense of freedom stems and immediately preceding the act itself there is often a feeling of well-being, a cessation of all cares. This is evidenced in the matter-of-fact presentation found in suicide notes."

Profile of Problems: Disruption at Home and Discipline

Early in childhood or adolescence the suicidal youngsters usually experienced the break-up of their home. In some cases this meant the institutionalization of the child or a family member. Many of them were placed in foster homes or left with relatives. Many of them changed schools and residences frequently. Many of these families were very poor. In some cases, the parents also had been depressed and had attempted suicide. A sizable percent of the suicidal youngsters had either a parent, relative, or close friend who had attempted suicide. Seventy-two percent had one or both of their natural parents away from home, either because of divorce, separation, or death. Most of those living with stepparents felt they didn't like the stepparent. A great many had a parent who was married several times. In about 62 percent of the cases both parents were working. Half of these families lived on less than $3,600 per year. The background is one of poverty, instability, and unhappiness.

The specific period just preceding a suicide is characterized by a vicious spiral of events. It may begin when a parent feels unable to cope with some behavior in his or her adolescent. The parent begins to nag and use severe disciplinary procedures to prevent the youngster from going out. He may resort to physical punishment. Parents of the suicidal adolescents felt that their children would get into less trouble if they were watched more closely. Therefore, they would question them about their activities and whereabouts. Because the adolescent's trust in his parent somehow depended upon dignity and the maintenance of a certain amount of privacy, questioning set up a vicious circle of mistrust. From the point of view of the adolescents (as revealed on a rating scale), withholding privileges, fussing, nagging, and whipping were considered the worst disciplinary techniques. The suicidal adolescents and their nonsuicidal counterparts agreed on this rating. At the same time, some of the adolescents felt they would gladly forego undesirable behavior, and their parents should have helped them to discourage this behavior. When the parents didn't intervene, the young people took it as a sign of rejection.

As the parent-child situation got worse, the parents grew frustrated, and the adolescent felt that his parents couldn't understand and were punishing him inappropriately. The biographies revealed that this impasse led to the adolescent's rebellion or withdrawl. This stage of deterioration usually led to a breakdown of communication between parent and child, in which the youth's withdrawal was a consequence. Essentially, both parent and adolescent would give up and stop trying to communicate.

Many suicidal adolescents said that they got into the habit of lying and would simply withdraw into their rooms, or withdraw into themselves in order to avoid their parents and conflict.

School

A third of the adolescents who had attempted suicide were out of school at the time. Either they were ill because of pregnancy or because of an earlier suicide attempt. An astonishing number had already attempted suicide in the past. A quarter of these suicidal adolescents had been out of school because they were acting up in class, had shown some emotional instability, or had been involved in fights. Half of them had been truant from school during the last 5 years because of lack of interest or active distaste.

To Whom Do You Turn in Time of Trouble?

When asked to whom they turned when they were in trouble, a quarter of the suicidal adolescents said there was no one to turn to. None of the control adolescents felt such isolation. The pathos and the loneliness of the suicidal adolescent is very dramatically shown in some of the figures. Of the 46 percent who reported their suicide attempt to other people, less than half reported it to their parents. Almost two-thirds of them talked to people other than family members. This is particularly significant since 88 percent of the suicide attempts occurred at home, very often with the parents in the next room. In every instance, the lack of communication between family and the child and lack of communication with peers was a very important factor in the period leading to suicide. On interview, these suicidal adolescents conveyed the despairing sense that death was the only solution, there was no other way out. Consider these excerpts from a letter by a 17-year-old Negro boy to his father. This note was written the evening before he made his second suicide attempt:

> "Dear Father, I am addressing you these few lines to let you know that I am fine and everybody else is and I hope you are the same. Daddy, I understand that I let you down and I let Mother down in the same way when I did that little old thing [the suicide attempt] that Wednesday night. Daddy, I am sorry if I really upset you, but Daddy after I got back I realized how sad and bad you felt when I came back to California.—I had lost my best girl the week before I did that. I had a fight because some

> dude tried to take advantage of her when I sped to the store, so I came back and I heard a lot of noise like bumping so I run in and there he is trying to rape my girl, my best one too.—Daddy I tried as hard as I could to make it cheerful, but it does get sad. Daddy I am up by myself. I've been up all night trying to write you something to cheer you up, because I could see your heart breaking when you first asked Sam's wife if they would have room and that Sunday Dad, it was hard but I fought the tears that burned my eyes as we drove off and Daddy part of my sickness when I had taken an overdose I did just want to sleep myself away because I missed you Dad.
>
> "But when I left I felt like I had killed something inside of you and I knew you hated to see me go, and I hated to go, but Daddy, well, I kind of missed Mother after I had seen her. I miss you and remember what you said, 'settle down', but Daddy I tried so hard so I went and bought some sleeping pills and took them so both of you could feel the same thing." [4]

When an adolescent has retreated from family problems into a love affair, and then the romance breaks up or culminates in pregnancy, then there is even more isolation than before. A girl is especially alone if her boyfriend disappears and she has already alienated other friends. Parents often become disillusioned and give up at the time their child needs help the most. In a letter to her former boyfriend, a desperate young girl showed the lengths to which she would go for a social relationship and a solution to the problem of pregnancy. She wrote on the night of a suicide attempt. A short excerpt indicates the tragic sense of rejection and isolation.

> "Dear Bill, I want you and I to get an understanding about certain things because I think you got the wrong impression of me * * * and believe me it hurt. I knew all the time you were hinting to me I was too young, didn't know nothing about life, but you were wrong. I know a whole lot about life. I'm ashamed of the things I know to be so young. I couldn't tell you this personally, 'cuz I couldn't face what you might have said and I sure it would have hurt my feelings badly. I'm two months pregnant by you. You don't have to admit it, I don't care. You may say anything you like. You don't have to worry about any trouble. It would be a disgrace for me to let people know I threw myself on you knowing you didn't care or feel anyway toward me. Don't worry, no one will ever know my child's father. I will never mention you to him or her whichever it be." [5]

Parents and Physicians: Surprised

Despite the history of increasing problems, the families were inevitably hurt and surprised by the suicide attempt. Parents and physicians who had seen the adolescents would say "it was so unexpected."

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[4] Teicher, J. D., and Jacobs, J. Adolescents who attempt suicide: Preliminary findings. *American Journal of Psychiatry*, 122(11) : 5, May 1966.

[5] Teicher, J. D., and Jacobs, J. Adolescents who attempt suicide. "*American Journal of Psychiatry*," 122(11), 1966.

Actually, some 46 percent of the suicide-attempters had visited their physicians at some time before the attempt. Over half had been treated for some physical or mental disturbance during the prior 5 years. A third had some serious physical complaint, and a third of them had some family member who was sick or had been hospitalized. In screening the adolescents to be included in this study, Doctor Teicher and his associates examined over 100. In the first 30 they found 11 with duodenal ulcers.

In spite of the long history of problems, however, the physician and mothers acted surprised by the suicide attempts. While perhaps expressing some guilt, the mothers would deny that there was anything in the home situation that would cause a suicide. The very people who were closest to the suicide-attempters apparently failed to see the progression of social isolation: the problems with parents, with poverty, broken romances, excommunication from school or peers, especially in the instance of pregnancy. Since these are problems that most people would be reticent to discuss with others, adolescents in such predicaments are especially isolated.

After a period of not communicating, their first suicide attempt came as a surprise to parents, friends, and schoolmates. The physicians who saw them just after the attempt had been taken off guard perhaps because suicidal people are not easily distinguished from others with severe problems. There seem to be no simple and convenient ways of anticipating a suicidal attempt. No litmus test can determine who is a potential suicide. Clearly a major reason that suicidal attempts are not warded off is lack of communication of the real feelings. The true biography of the unhappy person was not known by anybody around him.

Profiles for Prevention

Adolescence is a time of sufficient duress for parents and youngsters as new behavioral problems arise. Moreover, many of the suicidal youngsters in the Los Angeles study also had illness or mental illness in their family during the preceding 5 years. Doctor Teicher and his associates feel that various sets of events must be considered in anticipating suicide. Among them are such factors as economic status, geographic mobility, and the divorce rate in the home. These alone do not predict suicide. However, these events seem to occur at particular times in the adolescent's life and the timing may be critical. Along with an escalation of behavioral problems, a youth who is isolated from family and peers may be in danger of trying suicide.

It should not be surprising to learn that their parents also had unhappy histories. The mothers often got married only because they were pregnant. Some had illegitimate children. Quite a few suffered depression and were depressed after giving birth. This was particularly notable among the mothers of the *boys* who had attempted suicide. Many had illegitimate children or had been forced into marriage because of pregnancy. Seventy percent of them were separated or divorced, a good number of them after short-lived marriages of convenience. Needless to say, a huge percentage had suffered from economic deprivation.

Male Suicide

The number of suicides and suicide attempts among girls far outweighs the number of attempts among boys; and this has been associated with broken romances, rejection, and unwanted pregnancy. In attempting to understand the male suicide attempts, Doctor Teicher and Dr. N. L. Margolin did a special study of 13 of the boys in their group. They were interviewed by one of the authors after their suicide attempt. Identical questionnaires about parent-child relationships and school, about adjustment to peer groups and career aspirations were given to the boys and their parents. Both took a battery of psychological tests in addition.

The boys in the control group also came from broken homes. Many had both parents working and relatives living with the family. However, the vignettes of the suicidal boys differed in that they showed a repeated sequence of events which the authors summarize in this order: They had, first of all, a mother who was angry, depressed, or withdrawn, both before and after pregnancy. Generally it was an unwanted pregnancy. Then, there was the loss of some very significant person or persons in the patient's early life, usually the loss of the father. There was also a reversal of roles with the mother. At the time of the suicide attempt it had seemed to the boy that the mother (or his mother-surrogate) was also going to leave his life forever. During the boy's period of distress his mother was preoccupied with her own depression, up to the time of her son's suicide attempt.

An 18-year-old Mexican-American boy is typical. His mother never wanted him. She became very overprotective until he was about age 12. At age 5 his semi-alcoholic father left the home. At this point he and his mother began to shift around from house to house, mostly living with his grandmother. After the divorce he began to get headaches. His mother thought he missed his father. He always felt rejected, and he made depressed statements such as: "I wish I hadn't been born." Then at the age of 15 he was rejected by a girl. This left him emotionally fractured. He would get into romances where he was inevitably hurt and depressed. His mother felt she had never been shown any love or affection by her own family, and she was a chronically depressed person. She explained that, as she was getting older, she had been dating two men. One was a rather selfish man who overlooked her son. She broke up with him. Her boy was then 17 years old.

> "I was a very blind and stupid woman. I didn't realize what I was doing to Tom, how sensitive and emotional he was. Well, time went by and Tom started to go to parties and dating, not too often, but he had started to have friendships on the outside. Soon after I met someone at work from the same department and we got along real well. He was divorced also. He has a family of three to support, so we have quite a lot in common. The man moved in. He liked my son and went out of his way to cultivate him, but apparently things went along very well until Tom started to complain that since Sam had moved in with us he was nothing around the house just in my way, that I didn't love him any more, but that was not true."[e]

In a pleading letter to the doctor she asked what he could do to undo the damage she had done her son at an early age. Here was the tragic pattern of events—the unhappy circumstances around his birth, the divorce, his father's withdrawal, infantile identification with the mother, frequent moves, repeated loss of peer relationships, the clinging to an angry and depressed mother, and, finally, the threatened loss of his mother to a new man. Case after case revealed this kind of dependency and frustration in the first years of life. In 11 cases the fathers were physically absent from the home. In eight instances the father had left home before the child was 6 years old. Almost all of these boys were prevented from being children. They were thrust into the role of helping their mothers either because they were the oldest or the only child. In each case there was also a sense of loss on the part of the child, either because the mother and father had just recently separated, because the mother had a serious illness, or because a stepfather had just recently left home. In one instance, the mother had just recently married, and the boy had been left by his girl friend.

> "On the basis of our data we find that the male adolescent suicide attempt seems to have its origins in the mother-child relationships of infancy. Most importantly, these relationships revealed not only early deprivation, but chronic repeated separation threat or object loss. This state of affairs leads to continued, intense, archaic identification with the mother. The lack of a masculine image in the experience of these boys together with the ambivalence of the mothers prevents any working through of the Oedipal phase of development."[f]

A helpless and dependent child needs his mother and cannot "allow" her to be bad. He then blames himself for anything wrong in the environment, which allows him to soak up the badness, as it were, making things around him all right. The investigators suggest that this situation eventually creates a self-destructive pattern.

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[e] Margolin, N. L., and Teicher, J. D. Thirteen adolescent male suicide attempts. "*Journal of the American Academy of Child Psychiatry*," 7(2) : 301, 1968.

[f] Op. cit. p. 312.

> "The early and repeated separation trauma resulting in disturbances in early ego and superego development lay the foundation for later pathological identification, and leave their marks on character formation and personality development. As the child enters adolescence, the conflicts over separation intensify due to a number of concurrent reasons, all of which essentially have to do with the biological and psychological need to be autonomous from the mother. The adolescent male tries to defend himself against feelings of helplessness in many ways. He may regress to feelings of omnipotence and pseudoindependence and seek challenging, dangerous situations such as reckless driving, motorcycling, etc. He may act out antisocially as a defense to prevent loss of identity. However, it seems that these defensive attempts cannot be maintained when actual separation from the mother is threatened. This threat can occur in the form of the mother's withdrawing because of her depression, her becoming interested in a new husband, etc. Also significant is the breakup of the adolescent's romance, i.e., experiencing the loss of a mother surrogate. When the mother becomes depressed and suicidal, the adolescent perceives rightly that his very existence is a burden upon her. He acts as if he were saying, 'If I destroy the bad part of myself, then mother will live to care for me.'
>
> "Internally, ego regression with splitting occurs. The split-off part of the ego, representing the bad self, is rejected and persecuted by the parts of the ego and superego identified with the rejecting suicidal mother. *This identification is of great significance in the suicidal adolescents.* Freud (1923) states that the ego, feeling hated and unprotected by the superego, will let itself die, a situation that is similar to the anxiety in infantile separation from the mother." [8]

In these 13 cases, the boys professed to love their nagging and ambivalent mothers. They did not necessarily feel they were loved, but because of an infantile dependence, the mother's depression, anger, withdrawal, and disapproval had a very devasting effect upon them. In many instances, the mother also had suicidal thoughts, and the boys identified with their mother's depressed and suicidal state. Interestingly enough, the suicidal girls described their mothers in uniformly glowing and idealized terms and denied any flaws, despite the fact that their mothers were often very hostile.

> "The suicide attempt is an overdetermined symptom and whether it is an attention-getting or an attempt to die it is always serious. It is an effort to solve a chronic problem, living; a plea for help; an expression of rage and hostility; and at times a symbolic reunion with the pre-Oedipal mother or father." [9]

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[8] Op. cit. pp. 312–313.

[9] Teicher, J. D. The treatment of the suicidal adolescent. "*Proceedings of the IV World Congress of Psychiatry,*" p. 749, Madrid, September 1966. Excerpta Medica International Congress Series No. 150.

Therapy

In many ways the therapist in the hospital has proven to be the lifeline of these youngsters. He maintains his contact with the suicide attempters from the beginning of consultation until final rehabilitation or referral. When they are first brought to the hospital they are shaken, anxious, depressed, insecure, guilty, and apprehensive because of the anger and hurt that they've caused. They feel terribly alone, and this is probably their worst agony. Usually the mother has been angry and sometimes guilty; her next reaction is usually hostile and she will defend herself with great denial. The father, or more usually the stepfather, would consider the suicide attempt a bother and show little concern. Doctor Teicher recommends that suicidal adolescents should be hospitalized, if only briefly, and placed in a ward where there are other adolescent patients to offer warmth, support, and understanding. In many instances the patients of this study didn't want to leave the hospital, and they would cling to the staff and other patients. Adolescents will often talk about the precipitating events, such as their parents' refusal to let them go out, or a broken romance. The rejection by a boyfriend or a girl friend is a most common precipitating factor, but this would be taken in stride as an unhappy experience if there had been some positive experiences earlier in life. The role of the therapist as seen by the investigators is that of a person who provides understanding and love. Slowly the therapist can guide a young person to cope with his conflicts and communicate with his family. Meanwhile he offers support and is always available so that the adolescent doesn't feel so lonely and isolated.

From this study one may clearly see that youth, itself, is no antidote to a hostile environment. The old myth that all suicide attempts are impulsive and irrational is forever banished, and in this study one can see how an accumulation of adverse factors at a critical period shapes the biographical profile of the potential adolescent suicide. This profile might be used in further studies to predict and prevent suicide attempts.

This brief research has already shown that no simple correlations between life events can predict suicidal despair in a young person. Yet young people—in shockingly vast numbers—are miserable enough, and lonely enough that they are brought to hospitals by the tens of thousands each year, after attempting to kill themselves, often in a room right next to their parents.

Further research in this area has implications beyond suicide prevention. The development of biographical profiles may yield techniques whereby informed doctors, social workers, and school personnel might spot the precarious young person in time to obtain therapy for him. However, the import of this research is broader in its implications.

It begins to fold back the curtains upon the circumstances and the timing that weaken an individual to the stresses of life and alienate him from all of those who might help him. The chain of misery seems to pass from one generation to the next, and in each case privation plays its part. Moreover, the relations of family members show a psychodynamics that produces instability and separation instead of cohesion and mutual help. Adolescence can be an especially creative and exciting time of life. In this particular era, adolescents are having an ever-increasing impact upon society—they have changed the entire genre of popular music, for example—but exceedingly great numbers of adolescents are having the opposite experience. Suicide prevention studies among the most unhappy of these people may give considerable insight into what it takes to deflect an entire life from misery toward productiveness and participation.

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SERVING AN URBAN GHETTO THROUGH A COMMUNITY MENTAL HEALTH CENTER

TEMPLE UNIVERSITY
COMMUNITY MENTAL HEALTH CENTER
Philadelphia, Pa.

Elmer A. Gardner, M.D., Director

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Introduction

Evaluation of mental health services is one of the most difficult of all tasks in the mental health field. However, Dr. Elmer A. Gardner, director of the Temple University Community Mental Health Center, tells of a simple method which seems to have given the right answer in his case but which he does not recommend. It was forced on him.

The Temple Center is located in North Philadelphia, an urban problem area—lying directly north of Philadelphia's downtown section—that is home for more than 200,000 persons, most of them poor and 80 percent of them black. The area has the city's highest rates of crime, infant mortality, substandard housing, and unemployment. Until recently, and with some cause, residents of the community had tended to regard the university as an indifferent and even injurious representative of the White Establishment.

During the Center's first year of operation, thieves stole $10,000 worth of typewriters and other office equipment. For a while they got in by breaking windows; when the Center put bars on the windows of its main offices, the burglars forced the doors.

Finally one morning, after arriving to find still another typewriter gone, Doctor Gardner called the staff together. "If the thefts continue," he announced, "we are going to have to give up, and the staff will disband." Word spread throughout the community. There have been no more thefts. As Doctor Gardner sees it, even the thieves considered the center too valuable to the community to be abandoned.

More conventional means of evaluation can be offered. During the year before the Center became fully operative, which was in October of 1967, approximately 1300 persons from its catchment area had had one or more psychiatric contacts of some kind, and 480 of these persons had been hospitalized. On the average, each of the 480 spent 77 days in a hospital, usually Philadelphia State or the Veterans Administration Hospital. In contrast, during the Center's first year of full operation, it served 1700 catchment area residents, of whom only 300 were hospitalized, and these 300 averaged only 40 days in the hospital.

"In other words," Doctor Gardner reports, "about 37 percent of the people getting some sort of psychiatric service the year before we opened were hospitalized at least once. The following year, only 18 percent of such people were hospitalized." This 50-percent reduction occurred mainly, the director believes, because the Center had something besides hospitalization to offer to its 200 new patients a month.

Organization for Service

Of decided importance in helping the Center realize its varied "something besides hospitalization" program are its Mental Health Assistants—nonprofessional community residents who have been trained at the Center and are professionally supervised and given further training on the job. The training and work of the MHA's are reported in a later section.

The "something besides hospitalization" now includes:

- The Crisis Center, the emergency end of the outpatient services, where a psychiatrist is on duty 24 hours a day and other staff members are either on duty or quick call. Of the 15 patients seen daily, about a fourth are brought in by the police, a fourth come from the emergency department of the Temple Medical Center (after an examination suggests that their trouble is primarily psychological), a fourth have been referred by other agencies, and the others walk in from the street or are brought by their families. All these patients need or think they need immediate help, and they get it because the Crisis Center defines a crisis as "anything that somebody thinks is a crisis." At one end of the scale, the patient may be hallucinating or suicidal; at the other end, a person may have a marital, financial, or other problem and feel the need to talk to someone right away. The Crisis Center offers either immediate treatment or immediate emotional support.
- The Psychosocial Clinic, so designated because it serves both the individual whose problems are mainly social—bad housing, no job, shortage of food—and the individual whose problems are more strictly psychological. Its services include individual and group therapy, home visits, and the enlistment—with help from the Center's

other units—of the resources of such community agencies as welfare, housing, and job training. This clinic and the Crisis Center, functioning under the same director, serve as the major intake point for the whole Center and comprise its outpatient program.

- A satellite center, which serves a neighborhood 2 miles away. It was opened in the Spring of 1968 at the request of the Emanuel Methodist Church, which pointed out that many of the nearby residents would seek the help they needed if it were available close to where they lived. The Church gave this outreach station a waiting room, an office, and a meeting room. In less than a year, the satellite center had 200 patients on its list. Five other satellites are being established.
- The Partial Hospitalization Unit, which offers, (*a*) a day program differing in important respects from at least most such programs elsewhere (for example, the 30 individuals taking part are never referred to as patients, though many are psychotic and some have spent years in mental hospitals, but as "members," and these members participate in many of the unit's most important decisions), and (*b*) a night program offering group and individual treatment for 15 persons and a dormitory for eight, who hold jobs or go to school but are not well enough to face family strains, or the temptations of the streets, night after night.
- The Children and Family Unit, which helps patients either directly or through consultation with other divisions of the Center, particularly the clinic; consults with schools and the welfare department; and works with groups of parents in a preschool enrichment program. Through this unit also, the Center supports three "incentive specialists" of the Young Great Society, which is an organization of young Negro men dedicated to improving the community. The specialists, interested Negro nonprofessionals, go into the schools to work with youngsters who have motivational or other learning problems. Their primary job is to help a youngster "make it" in his grade and go ahead prepared for the work in the next. But the specialists serve as case detectors, too, referring disturbed children to the Center. In addition, the children's psychiatrist who heads this unit and members of his staff meet with the incentive specialists and the teachers to discuss a school's mental health problems. These often seem to be problems of communication between faculty members from one social class and students from another. This unit also works with youngsters who have been suspended or expelled, the goal being to help them change their behavior and to persuade the schools to take them back. A program of care for the mentally retarded is being developed.
- The Consultation and Education Unit, which has established mental health training programs for policemen, public health nurses, ministers, and workers in a variety of voluntary, State, and city agencies. These programs try to help the participants handle more effec-

tively the problems they face daily. The Community Organization section of this unit has embarked on several projects believed to be either unique or rare among Community Mental Health Centers. These include: (*a*) cooperative work with a tenants' council to withhold rent from landlords, as permitted by law, in order to force them to meet the legally established standards of repair and maintenance: (*b*) the establishment of a "patient's advocate service" to present complaints about the work either of the Center itself or of other community agencies to a council of community representatives; and (*c*) an effort to foster political awareness among community residents.

- The Social Adjustment and Rehabilitation Unit, headed by a vocational psychologist, which works both within the Center and with agencies and industries in the community to find training programs and jobs for the hard-core unemployed treated at the Center. This unit directs several rehabilitation counselors of its own and three "activities therapists," who are graduates of the Mental Health Assistant training program. The counselors and therapists are assigned to the day program, the outpatient clinic, a special Temple Unit at the State hospital, and other divisions of the Center. The Unit also has the services of a full-time professional counselor, assigned by the State Bureau of Vocational Rehabilitation, and of a young Negro who studied community psychology at Syracuse University and has recently been hired as Vocational Program Specialist. The latter has these major assignments: (*a*) to work with personnel at Temple Medical Center who are training youngsters the schools have designated as mentally retarded, and to help find jobs for these youngsters when the training period ends; (*b*) to cooperate with other agencies in an effort to make the most effective use of resources for giving the jobless what they need in the way of job training and help with psychological problems; and (*c*) to help teen-age gangs organize toward the establishment of their own business ventures.

Recently, too, the State Employment Service has designated the Center as one of its outreach stations, setup to find the person who needs a job and then to help him get it, rather than to find a vacancy and then someone to fill it. Half a day a week a representative of this Service comes to the Center to discuss individuals believed ready for placement.

As of early 1969, the director of the Social Adjustment and Rehabilitation Unit reported that about 25 percent of the patients who had received its services had moved into jobs or training programs, about 25 percent had dropped out, and the other 50 percent were still receiving services in one of the Center's units. He was dissatisfied with this record and with the inability so far to follow up the patients who had moved on or dropped out. Still, he noted, many of the personnel and some of the services were very new.

There is also the Research and Evaluation Unit, established to determine more scientifically the value of the Center and its various programs. Actually, an end to thefts from the Center, or even a 50 percent decline in the hospitalization rate is not a true indication of the value of the Center's programs. The director of this unit, a psychologist, hopes to add an economist, a sociologist, and a systems analyst so that cost-effectiveness studies can be made—that is, studies to answer, "What is the cost of such and such a program in relation to the good it is doing and in relation to the cost-effectiveness of other programs?" Information is being collected on all patients coming to the Center, on what happens to them there, and on their lives after treatment is discontinued. Basic data for program evaluation and planning have been obtained from a survey of the service provided to catchment area residents during 1966 by all psychiatric facilities in the Philadelphia region, a census of 15 percent of the households in the catchment area, and an attitude survey of 2,000 families.

Treatment Teams

To tie the clinical services together, the Center has established on a trial basis three teams of staff members. Their mission is to ascertain and provide—through one or more of the Center's units or from resources outside—the help needed by a given individual for as long as he needs it.

The teams are set up according to the length of service a patient requires.

The Walk-In Team comprises part of the staff of the Crisis Center. Headed by a psychiatric social worker, it includes a psychiatrist, a psychologist, a psychiatric nurse, and four mental health assistants. If the initial evaluation indicates that the patient's problem can be handled in a short time, this team works with him, and often his family, for as long as 30 days. The patient may come to the Center every day to talk about his problems and receive advice, and members of the team may accompany him to other agencies that can give him such concrete help as finding a place to live. Brief hospitalization, as noted in the following section, is available if considered necessary.

The Problem-Solving Team, with a slightly larger staff, assumes responsibility for individuals who can be substantially helped, the evaluation suggests, within 90 days. About a third of its service is extended through home visits.

The Extended-Treatment Team has responsibility for those patients who are judged at the start or at some point later to require long-term help—longer than 90 days. These include not only those psychotics who need hospitalization of some type but also those individuals who seem capable of benefiting from traditional therapy. This team provides the aftercare for patients discharged from the Temple Unit of the State Hospital.

Both the Problem-solving and the Extended-treatment teams rely heavily on group therapy as well as one-to-one therapy. But each type of treatment is likely to be under the immediate supervision of a mental health assistant.

Facilities for Full-Time Care

Though the Center is proud that it has greatly reduced the rate of traditional hospitalization, it knows that some patients do need 24-hours-a-day care, and for these it has beds in three places:

At the Crisis Center itself, where acutely disturbed individuals—including alcoholics, hallucinating persons, senile people found wandering the streets, and would-be suicides—can be held and treated overnight, if advisable, or even 2 or 3 days and nights, before being transferred to another unit of the Center, outpatient or inpatient. The overnight facilities available at the Crisis Center are scarcely ideal—six beds in windowless cubicles—but they do help keep people out of mental hospitals.

At the Temple University Medical Center, located nearby, where 15 of the 30 beds on the psychiatric ward are available for short-term patients referred by the Center. "Short-term" means up to 4 weeks. At any given time, this facility generally has five patients from the Center. The total is about 120 a year.

In the special Temple Unit of the Philadelphia State Hospital, at least half an hour away by automobile and twice as distant by bus. This is the Center's main resource for patients from its service area requiring inpatient care. The special unit has much the same institutional air as the rest of the hospital, but it is staffed by people, except the attendants, who are responsible to the Center, are paid by the Center, and operate a Center-directed program that includes a daily community session of all patients and staff members, several daily activity groups, and a policy of informal contacts between patients and staff.

Before the community mental health center opened, disturbed persons from its area were committed by the State hospital's reception center in downtown Philadelphia. Some area residents are still taken there, but the reception center officials now send them to the Crisis Center, which often finds that they can be treated more appropriately in the community. For some other persons the State hospital must still be used, but they are placed in the Temple Unit. This division cares for about 220 patients a year. Eventually, Doctor Gardner hopes, such patients will be cared for by a residential program—in two or more houses—in the community.

The Center's Background and Philosophy

A few years ago the University's Department of Psychiatry decided to study the epidemiology of mental illness in the surrounding community because this community had all the characteristics—including crime, alcoholism, drug addiction, poverty, poor housing—that make our urban situation critical. An epidemiological study should provide basic information for the fight against mental illness, and factors associated with it, not only in North Philadelphia but also in similar communities elsewhere.

Gardner, who had established the pioneering and successful Rochester Case Register—a record of people receiving mental health services throughout Monroe County, N.Y.—was brought in to discuss the possibility of setting up an epidemiologic research unit at Temple. The Rochester man suggested a different approach. Since the relations between the University and the community had been less than cordial, he pointed out, a university research team might find it extremely difficult to get the needed facts. Set up a mental health center that doesn't ask the community for anything but instead gives it something, he advised; then the research project can be made part of the Center and will be more likely to succeed. The advice was accepted, and Gardner, who had had experience in community psychiatry as well as in epidemiologic research, was named director of the proposed Center.

Today he still emphasizes service, particularly emergency service, and he views it as more than a medical obligation or a humanitarian goal. His aim is to win community acceptance in order that the Center can provide still more services. "The only meaning we can have," he says, "is through our clinical services. Clinical services that have the most impact on people are the emergency services, which we established right away and for which we are still best known. [A recent television report is noisy with sirens and ablaze with lights as time and again the police rush somebody to the Crisis Center.]

"Most mental health people who have worked in emergency services," the director adds, "tend to function in terms of disposition—do something: get this person out of here so you can be ready for the next one. But anybody who comes into our mental health center is somebody we ourselves should try to help. That means we need a lot of supportive services, such as immediate home visitation, which we are now able to carry out, and different kinds of programs for different kinds of patients, such as alcoholics, drug addicts, and geriatric cases, programs we are now able to offer only to a limited degree."

Social problems contribute to mental illness. In fact, in such a community as North Philadelphia, Gardner believes, they are usually either an important cause or the chief precipitating factor. So the job of a community mental health center is not only to help the sick individual but also to combat the social forces that probably helped make him sick. "And the first time that we get involved in pushing for better housing, for example—in fact, we have already begun to push, a little—or get involved politically," he says, "we are going to need all the support we can get." Far from being forgotten, nevertheless, epidemiologic research began soon after the Center opened and is becoming increasingly important.

Gardner and the University psychiatric department planned that the Center would operate mainly from the Temple Medical Center. As opening time approached, however, it became apparent that the new facility could be spared only a room or two. The University then made available five attached houses on Ontario Street, near the hospital, which it had been using as dormitories or offices, and paid for renovations. The houses are narrow, three-story, steep-staired structures, typical of many in the community, though the others usually have been divided into apartments. Most of the rooms are small.

"There is a certain romanticism about working in old, renovated houses," says the director. "Also, it enables us to fit better into the community and be less institutional in appearance. But we pay a price for it because the space is not functionally right."

Even with five houses the Center was cramped almost from the start. Then the city's Child Welfare Department offered to use a grant from the Philadelphia Foundation to pay for consultative services. With this money the Center rented additional facilities two blocks away. Among these is the Manse, so called because the minister of the Tioga Presbyterian Church used to live there, a large Victorian house of white-painted brick. It is set well back from the street, with the old stone church, which still functions, running along one side and wrapping itself around the rear. The Manse provides offices for the director and other administrative officials and rooms for consultative and community organizational services. Several other offices and an auditorium and activities room are in the church building, reached from the Manse by a catwalk at the second-story level.

Staffing grants from NIMH totaled slightly more than $1 million in 3 years, with matching funds coming from the University and the State. These funds must go up as the Federal portion of staffing money goes down, annually. Doctor Gardner has considered applying for a construction grant but has not been able to obtain the money to match it. He and his staff are certain they could work more efficiently if the Center had more room, all of it under one roof except for the satellite centers and the other outposts being planned. For the present, however, the problem of space must be met on a make-do basis.

About 40 percent of the professional staff are Negroes. Among these are two of the eight psychologists; eight of the 14 social workers, including the chief social worker; and 10 of the 16 psychiatric or public health nurses, including the chief nurse. All 10 psychiatrists are white, but efforts are being made to employ two Negroes. Of the 140 persons at the nonprofessional level—including secretaries and mental health assistants—about 80 percent are black.

The director's emphasis on service and on nontraditional ways of delivering it is echoed throughout the Center. Listen to the experiences and views of some of the senior staff members:

Anthony F. Panzetta, M.D., Director of the Psychosocial Clinic and the Crisis Center, speaking of the days when the clinic was located at Temple Medical Center and the patients were assigned to psychiatric residents at the hospital working under the supervision of a psychiatrist from the mental health center:

> "It quickly became apparent that psychiatric residents had been oriented toward the evaluation, diagnosis, and treatment of persons whose primary symptomatology and complaints remained rather discretely within the language of psychological disorder. Patients from our catchment area tended to mix their complaints with the many reality problems which complicated their lives. There was a continuing impression that the treatment of this population was in fact an inferior task and one that was ill-suited for the training of psychiatric residents whose ambition was to perform more traditional psychotherapy with more traditional patients in more traditional settings. Residents and staff men alike also felt a significant degree of frustration and they recognized their own inability to respond to the urgency and demands of the patients from this population. It was also clear at this early stage of development that patients themselves were dissatisfied and tended not to return."

Bernard Borislow, Ph. D., Assistant Director for Administration, speaking of how to help people from what are generally called 'multiproblem families":

> "Until recently, many if not most of us mental health professionals have kept searching for pathology until we have assured ourselves that not too much can be done for this person and therefore we have the rationale—the cop-out—for not trying to do much. We say 'Gee, this is a sad case' and we speak of 'multiproblem families.' That very term itself makes us tend to minimize our efforts to help.
>
> "People haven't been paying much attention to the other side of the coin—the minimum resource family. While it is important to understand the pathology, it is also important to understand the good things that must be working for the family—what these things are and how they can be strengthened, what the interests and unrecognized resources of the individual are and how they can be built upon. I don't care if we are talking about even a schizophrenic who is hallucinating. Maybe the first thing we could do to help such a person is to get him not to tell anybody. Is it impor-

tant to get such a person into some training or activities program so that he can feel better from gradually knowing that he can do something important, and so that he can gradually recognize that it is important to show up at a place on time and stay there for a while and leave when everybody else leaves, and that it is important to learn how to work under supervision? What we are trying to do here is to influence the professionals, who are teaching the paraprofessionals, in order to contradict the natural tendency to do things that they learned in their own training. You can say, 'Well, we are going to do social psychiatry or community mental health,' and yet do nothing more than change the name of the game. That's what we have been working on, and we think we have been successful."

William Hetznecker, M.D., Director of the Children and Family Unit, talking about some of the functions of a community mental health center:

"One function is to bridge the gap—to be a kind of mediator—between the community and the institutions that are supposed to serve the community. Today in this community, for example, the schools are alienated from the people. So we have been working on ways to open the schools to community people—not just people with credentials, like psychiatrists, but people who represent the community rather than the System—so they can help teachers and kids with problems of motivation, of behavior, of black-white relations. People with the backing of an agency like ours can put pressure on the schools to look at what they are doing—and what they are doing may result, for example, in a kid's being several years behind in reading by the time he reaches sixth grade. The community representatives are going to raise some —. But you can raise — so that nothing gets done and the schools get shut down, or you can do it another way. Without this destructive, paralyzing confrontation, you can promote change from the inside.

"The idea that child psychiatrists are the people who should deal with problem children has lasted too long. It has given everybody the chance to push the kids over to the psychiatrists, and it has built up the problem of waiting lists and duration of treatment. In the mental health center you have to say, 'Look, lots of people are good at dealing with kids. Parents are very good, youth workers are good, mental health workers are good, teachers are good.' What you want to do is help them to be better, to bring out their potential, to help them communicate, and to get them to want to share their skills."

David Berger, Ph. D., Director of the Research and Evaluation Unit, talking about some of the major goals of his work:

"I do not believe that people come to a setting such as this because they are hallucinating, or because they are compulsive, or hysterical, or whatever. I think they come because they are in trouble in terms of their behavior in four main areas of living: family relationships; social productivity, or vocational and educational relationships; self-care; and relationships with the law. Those four areas are important, I think, if people are to get along in their communities, regardless of what community they live in.

> So we need to know how a person has been adjusting in those areas when he comes to us, and what changes in his relationships he is able to make with our help."

Frederick Glaser, M.D., Director of the Partial Hospitalization Unit, concerning that Unit's results:

> "We consider our work a success if we get a member back to an appropriate job or school. We have returned many people to work and we feel we are successful. But then we're not objective analysts."

Perhaps the Center's greatest innovation, and one that delineates an important part of its philosophy better than words, is its heavy dependence on mental health assistants (MHA's)—most of them black and longtime residents of the community, about half of them with less than a high school education, and three of them former patients of the Center.

When Doctor Gardner proposed to train community residents who did not have the usual academic credentials, most of the professional members of his staff demurred. Now, he reports, virtually all the objectors have been won over by the way the assistants have performed. Several MHA's help staff the day program and are leaders or co-leaders of group therapy sessions. Some are on the staff of the Crisis Center. A number work as psychotherapists, on an individual or group therapy basis, in the Psychosocial Clinic. Two have been appointed to the new position of patient's advocate, a post that calls for them, among other duties, to consult, reason with, and even talk back to professionals. Others help the community work for better schooling and housing. As part of their other duties, many make home visits—alone, with a professional, or with a medical student who wants to see community problems at first hand.

Without this additional manpower, the Center would have been unable to mount the program that has been outlined. Some of the more unusual aspects of this program are described in more detail in the following sections.

Mental Health Assistants

Two training programs lasting a year each have given the Center 45 mental health assistants, several of them rated among the most valuable members of the staff. All but four are Negroes, and 41 are women, a few of whom had worked in offices but most of whom had been housewives or unskilled workers, or both. The great majority are from the area served. About half have completed high school. The 50-percent decline in the hospitalization rate, noted earlier, is attributed in large part to the assistants. They made it possible for the Center to see a troubled person immediately, to help him or get help for him, and in many cases to keep in touch with him as long as necessary.

From the beginning there had been a professional staff at the Crisis Center, and there always will be. But the program was hampered by a manpower shortage until the MHA's came along. Now about 40 percent of all the persons who come to the Crisis Center are referred immediately to the mental health assistants, and many of these persons are treated by them. Each MHA is supervised by a psychiatric nurse or social worker, who in turn is supervised by a psychiatrist. If the direct help of a professional seems needed, it is available. But generally it is the assistant, who typically has grown up in the community and has been chosen for his sensitivity and emotional strength, who continues to see the patient—at the Mental Health Center or at home or both—perhaps daily at first and then less often. And it is the assistant who steers the patient to whatever individual or unit in the Center, or in other agencies, that can help meet psychological or social crises.

One midnight, the psychiatrist in charge of the Crisis Unit at the time, telephoned a mental health assistant at her home. "Mrs. Jones came in 2 hours ago," he said. "She's highly anxious, but I can't get a thing out of her. She's asking for you."

"Put her on the line," said the assistant, who had seen Mrs. Jones several times before.

"What's the matter, Lucy?" she asked.

"I'm in terrible trouble. I've got to see you."

"Won't it keep till the morning?"

Mrs. Jones began sobbing. "I'm afraid not."

So the MHA dressed and went to the Center. In a few minutes she had the story. Mrs. Jones's husband had left her a few days earlier, and she had become increasingly depressed. The rent was overdue, and the food about gone. She was so miserable she'd like to die. She had been wandering the streets all evening trying to make up her mind to kill herself.

After listening to her, the MHA conferred with the psychiatrist, who asked for ideas. "Sedate her and put her to bed here," the assistant suggested. "I'll be back in the morning." She sat down with Mrs. Jones again, promised to help her get money for food and the rent, and talked with her until the sedative took effect.

Within the next few days, after helping Mrs. Jones meet immediate needs through the city's welfare department, the MHA got her enrolled in a training course for office workers. By learning to do something useful and to achieve financial stability, the assistant reasoned, Mrs. Jones would be better able to solve, or adjust herself to, the marital problem.

In another instance a sixth-grade girl old enough to be a high school sophomore was referred to the Center, by the school, for truancy, sexual escapades, and stealing. A mental health assistant thought she needed her mother's attention and could not get it except through antisocial behavior. "She's just no good," said the mother.

The assistant consulted a children's psychiatrist. "I said what I thought, and he said what he thought," she reports, "and we found ourselves in agreement."

Focusing on the girl, since the mother proved unreachable, the assistant got her admitted to the Center's day program on a special schedule that let her spend part of each day in school and part at the Center. Though not assigned to the day program, the MHA would stop by to see her because "I didn't want her to feel that I was dumping her: she had been dumped enough."

A drug addict—who had developed an $85 a day habit—was paroled on condition that he receive therapy at the Center until he could be admitted to the NIMH hospital at Lexington or some other residential treatment center. Within 3 weeks he was communicating freely with a mental health assistant. He told a troubled story—which the assistant checked out—of a mother who treated him as a boy and of a wife who also treated him as a boy and whose faithfulness he had some reason to question. The assistant gave him her telephone number, "so that if he ever really feels pressured, he can talk to me either here or at my home," and helped steer him through hospital-admittance procedures.

A high school girl who remained a truant in spite of slaps from her mother and beatings from her father was found to have several deep-rooted problems. The real trouble, however, the girl maintained, was lack of clothes good enough to let her keep up with other girls. A mental health assistant decided that the most immediate problem did indeed have something to do with clothes but more with a general unappetizing appearance. The assistant talked about the need to keep herself clean and neat-looking, to iron her clothes, and in other ways make the best of what she had. "I tried to emphasize that material things really didn't count, that she should be interested in her education so that she can get a job when she is finished and dress like she would like to dress."

The assistant did much more. With the help of others at the Center, she started a clothes bank, which tickled the girl even though she did have to hem and make other changes—as she had been warned would be the case—in some of the offerings. The assistant also helped the girl's father get treatment for an injured leg that had prevented him from working. And she hunted up an aunt and pointed out the girl's need for the attention and affection of an older woman. Sometimes the assistant would walk past the girl's house and take her to the corner drugstore to have a Coke and to talk. After a year, the situation has worked out favorably.

A woman in her sixties, who had been in and out of mental hospitals for years, was advised that she could pick up her medicine at the Center instead of going all the way out to the State hospital. One of the assistants was assigned to talk with her and to keep in touch with her. "She asked me who I was," the assistant recalls, "and I thought maybe the race thing had come into it and I wasn't quite sure she wanted to talk: she was white. So I brought it up and asked how she felt coming in and talking to a colored lady. I knew if I brought it up and was honest with it, she would be honest with it. And she said, 'Well, I don't know but I think it will be all right.' And it was. The patient let me know in no uncertain terms that she would not require a lot of attention and that coming here and taking my time wasn't fair. I told her that this is what I was here for. The visits were like social visits. She did very well. And sometimes I would go to Bingo with her, and if I won she would be just as thrilled as if she had won."

A boy just past 10 years of age and described as a borderline psychotic had been expelled from school for beating up other pupils and threatening the teacher. To his rather distant mother, the expulsion meant an extra burden, which added to an already strained relationship. A mental health assistant was able to get the boy to talk frankly about some of his basic troubles, including sexual problems and a deep fear of other people's hostility. She also helped the mother realize that the youngster was not just a stupid troublemaker but a person with difficulties that were giving him concern. She worked with the school, too, so that, after 3 or 4 months, it agreed to take him back: first for half a day a week, then for a half a week, finally for the full program. Though the boy is not rid of all his problems, he is functioning in a normal situation. The MHA still sees him at home or in the Center.

Interestingly, Doctor Hetzneker, head of the Children and Family Unit, has seen this boy on two occasions, and the youngster had become defensive and hostile and ultimately, in the psychiatrist's words, had "clammed up." The racial difference probably had something to do with this, but the doctor—who has dealt successfully with other Negro children—views the main trouble as the child's attitude toward psychiatrists. "He saw me as that authority person who was somehow going to prove that he was out of his mind and send him to a hospital or jail or somewhere, even though I assured him I was not. Some white children feel the same way. The mental health assistant did not represent this same threat, and the boy opened up."

One of the Center's therapeutic groups comprises 15 chronic schizophrenic women recently discharged from the State hospital. This group was started and is conducted by a mental health assistant who used to be "just a housewife." She has been resocializing the members—teaching them to sew, taking them on shopping trips and to the theater, getting them back into the community. "She has done more with these chronic schizophrenic patients," Doctor Gardner reports, "than I have seen done with most such people by professionals."

Doctor Panzetta, Director of the Crisis Center and the Psychosocial Clinic, gives this testimony: "We have had a year and a half's experience with 17 mental health assistants in the clinic, and I know they can support chronically psychotic people as well as or better than doctors can. They can keep them out of the hospital better than the doctors can. The mental health assistant bridges the culture gap. She understands the patients that we have."

Getting a good mental health assistant is not only a matter of training. "By and large," Doctor Gardner reports, "the assistants are working out very well—we could not do without them. I think this is so because we managed in both of our training programs to pick good therapeutic persons to begin with. In fact, there were more persons with psychological insight among the trainees than in any group of first-year residents—M.D.'s who have completed their internship—I've dealt with."

Doctor Panzetta adds: "We have picked up people who are naturally emphatic and who are good people, and we have allowed them to work with sick people. That helps—just doing that alone. Don't misunderstand me. I think it's very valuable to be trained and to know what's going on as much as you can. But a good therapist gets born first, and then he gets trained." In people like those who have become MHA's, he is convinced, "There is a tremendous amount of manpower potential that remains untapped."

What if a nonprofessional makes a mistake? "I haven't seen anything happen that has been unalterable," this psychiatrist answers. "In most cases a psychological difficulty is not like a surgical emergency, where if you cut in the wrong place you are liable to kill somebody." He recalls that when he was a psychiatric resident, his professor told him: "As long as you go in there wanting to help, you are going to do something to help." A mental health assistant comments: "When we aren't sure what we ought to do, we holler."

Doctor Panzetta suggests that it may take 5 years to nail down exactly what mental health assistants can do best. "I think we vacillate sometimes between giving them too much to do and not giving them enough, and I don't know whether or not we have found the proper balance. You assign them cases and see how it works."

One problem, incidentially, has been "creeping professiona[illegible]," defined by Doctor Panzetta as the tendency of some MHA's to [illegible]w traditional therapeutic practices and at each appointment spe[illegible]0 minutes with the patient within the confines of an office. They do it because they know many of the professionals do it. Since the Center stresses flexibility of treatment and since it values the basic intuitive talent of the assistants, the tendency to set up rigid schedules and rely solely on "word therapy" is discouraged.

Seventeen of the MHA's are described by the Center's director as "primary therapists," working as in the cases noted. Another three are "activities therapists," leading or helping to lead recreational and craft programs. Others called "community workers" are involved in neighborhood projects described later. The rest work in other divisions of the Center.

Training the MHA's

The selection processes and the training program, which have been under the direction of Mary Lynch (who majored in sociology and had experience in settlement house work), have several unique aspects. One of the most important, the Center thinks, is a 3-month screening operation during which prospective trainees spend most of their time interviewing people as part of a census of the area served.

Little attention has been paid to the backgrounds of prospective trainees. The Center knows that in some cases they were, as the staff describes it, "atypical," the chief examples being three persons who were once mental patients themselves. So far as the Center knows, no trainee had a criminal record—but then it didn't ask. "We do give preference to people from the catchment area," the training director says, "and almost all the assistants are catchment area residents. Almost all of them are black, too, though we didn't deliberately set out to get black persons. Not all of them are poor, in the sense of being below the poverty line, because we don't hold altogether with those authorities who say poor people should be hired for work like this because they understand the poor. To an extent, that is true. However, a mental health center like ours needs people with a lot of strength—people who have managed somehow to deal with their environment with some success—so they can help lift the others up. It just happens that some of the people we have hired have been above the poverty line. We have made neither poverty nor race a criterion."

During the initial interviews and tests, the staff did look for these qualifications: average intelligence, stability, motivation to learn a new role, perceptiveness regarding oneself and the community, compassion, ability to assess a situation, and limited preoccupation with personal problems.

All but four of the 45 trainees who have become MHA's are women. They are between the ages of 20 and 50, most of them have families, many have working husbands, some have a record of having moved from factory jobs into sales and clerical positions. They know intimately the problems of "the jungle," as ghettos are sometimes called by the people who live in them, but are not among the jungle denizens given to antisocial activities.

Why such a large proportion of women? Among the explanations given by the training staff is the relatively low rate of pay—$3,900 a year till the end of the probation period, which lasts a year, starting with the census project and ending with 3 months of in-service training. The workers were then raised to $5,000. A year later they were raised to $5,500.

"A significant number of black men in this community, possibly a majority," Miss Lynch reports, "support families, and they cannot do so on $3,900." Other factors include the need to be on call evenings as well as days during the census-taking period and also as members of the Center's staff, which prevents a person from holding more than one job. There may be a historical holdover at work, too: black women have generally found it easier than black men to be accepted into the labor force, and this fact, Miss Lynch believes, is still ingrained in the attitudes of black men. But she also believes that if the Center had campaigned aggressively for black male trainees and had offered stipends comparable to wages paid by industry, more men would have applied.

In the first year's program, the trainees spent 3 months interviewing 10,000 households, or a sample of about 15 percent of all the households in the catchment area. The interviewers used a form similar to Federal census questionnaires. This project served to bring figures about the area up to date and to provide a base line for further research. It also served as a training and selection mechanism because the trainees, if they were to be productive, had to deal with all kinds of people and had to show qualities of persistence and independence as well as of tolerance of the other person's attitudes and way of living. The return rate was 90 percent, considered excellent.

During the second program, the trainees again spent 3 months interviewing people, this time as a survey of attitudes about health and health services. The respondents were a sample of those interviewed the first year. The questionnaire included a 30-item checklist of mental health symptoms and numerous questions to elicit information on how much a person knew about mental health services and how willing he would be to use them. The trainees could not locate 15 percent of the cases and were turned down in another 15 percent. About 2,000 persons were interviewed.

In both years the training staff put a great deal of emphasis on what the trainee did as an interviewer. "In psychiatric interviewing," Miss Lynch notes, "we often tend to spend much time inquiring into what goes on with the patient, and perhaps we don't consider sufficiently what impact we ourselves are having on a situation—how our own attitudes, as they get across to the patient, affect his responses and behavior."

So the trainee would be asked to discuss the interviews and sometimes to recreate parts of them. The staff was interested in learning if the trainee had control of the interview, and how the two persons felt about each other. "And," Miss Lynch says, "we have some dramatic evidence that we were teaching tolerance and changing attitudes."

For example, one trainee, an almost meticulously neat woman, was appalled one day at the evidence of slovenly housekeeping that faced her in one apartment. The interview went badly but finally was completed. Then the respondent said she had to run down to the store for a carton of milk, and would the interviewer please babysit for a minute. It was 2 hours before she returned. Back at the Center, when the interviewer expressed exasperation and even anger, she was asked to act out the situation. It became apparent to the staff and many of the trainees that she had unconsciously expressed disdain almost from the moment the respondent had answered the door—that the interviewer had had no tolerance for what she saw and that she had not considered the possible reasons for the slovenliness. Since a good therapist is tolerant and understanding and not merely judgmental, it was important for the trainee to realize that her own attitude—communicated by gesture, tone of voice, and failure to pickup and comment on some of the things the woman told her—had contributed to the woman's later behavior. Before finishing the reenactment, the interviewer began to sense that this behavior might have been a way of getting back at her.

"I believe this is a good means of training people," Miss Lynch adds. "You get out and you do it; you don't simply read about it."

The meticulous trainee is now rated a good mental health assistant. She probably still makes people angry—"We all do," says the training director—but she is less bothered by attitudes and behaviors that once would have made her show contempt. By modifying her own attitudes, she has better opportunity to modify the attitudes of others.

For the first program 80 women applied and 36 were accepted. They knew that the census work would last only 3 months and that only some of the group would be retained for the rest of the program. Seventeen of the 36 finished the job and went on to the more formal phase of training. Most of the others were dropped either for failing to produce or for displaying personality characteristics, such as inability to cooperate, that were considered unsuitable in a mental health worker. A few quit because they found the work too hard; taking a census in such a community is indeed hard work. Of those who failed to make the grade, six had been rated as calculated risks after the initial interviews. But six others, also considered risks, finished the program, and two of these are now among the best assistants. On the other hand, three persons initially rated as good or excellent had to be dropped.

Those directing the program conclude that, in selecting nonprofessionals for training as mental health workers, neither interviews nor standard psychological tests are sufficient.

Miss Lynch and her co-workers think that the value of a census or some similar project as a selection and training laboratory cannot be emphasized too strongly. "The census operation," they report, "provided a wide variety of interviewing experience which served to enhance the interviewer's ability to assess a situation quickly, to develop a flexible and innovative approach, and to develop tolerance tempered with honest annoyance." The performance in such a work program may be the one best predictor of a trainee's value as a mental health assistant simply because it shows whether or not a person is persistent, independent, and reliable. One woman who failed to produce as many census reports as expected was retained for a while, nevertheless, because the training director thought she would be a good mental health worker. The woman proved her wrong. (When men are among the trainees, however, a survey may be an unfair preliminary project in an area like North Philadelphia. Many families simply refuse to let them in.)

After the census came what the Center calls "the didactic training period," though the classroom and lecture-hall atmosphere usually associated with "didactic" were missing. There were, indeed, lectures on the history of psychiatry, the recognition and treatment of mental disorders, the psychological development of the individual and the family, major contemporary social issues (including housing, poverty, and the black family in American life), and other subjects aimed to inform the trainees about the mental health field and prepare them for specific roles in the Center. Lectures on communicable diseases, maternal and child health, chronic disease, environmental health, nutrition, and community health programs were also given so that the workers would be able to identify health problems and assist families in meeting them.

More important than the lectures, however, were the free-wheeling discussions that followed and the twice-a-week meetings of small groups of trainees to talk about what they had heard in a lecture or anything else that was on their minds. The group leaders emphasized the importance of insight, tolerance, and a commitment to care for others. Each trainee got to know her fellow trainees very well, arrived at a better understanding of herself, and became more familiar with the problems she would face as a mental health worker. Psychodramas based on actual or likely experiences helped the students become sensitive to what a person says, whether in words or in some other manner such as gestures, facial expressions, and shifts in position. In fact, the heart of the program is described by Miss Lynch as "sensitivity training," or "becoming psychologically minded."

During this same period, each trainee also located and evaluated one or more persons who had been referred to the outpatient clinic but had not kept his initial appointment. The training staff reports that this part of the program is difficult to evaluate but that it did bring to a head the trainees' dissatisfaction with being called, as they had been, "mental health aides." Almost without exception, they claimed that people would confuse them with nurses' aides; they refused to carry cards identifying them by the original title, and they would not use the term in answering inquiries about their work. The new designation, "mental health assistant," gave them more dignity and confidence.

The first trainees were graduated and assigned to jobs in the Center in May 1967. For the next 3 months they were considered on probation. They received considerable in-service training during that period and for some time afterward.

Announcement of the second program, which began that Fall and ended in November 1968, brought 100 applicants, a dozen of them men. Some 40 were chosen for the preliminary selection and training project, the survey of health attitudes. Twenty-eight, including four men, finished the program and were hired as MHA's.

The second program added courses in language skills. (As a matter of fact, many of the graduates of the first program, as they began working and saw the necessity of taking notes and keeping records, asked for such instruction and received it as part of their in-service training.) The trainees submitted weekly essays on some topic of interest to the group, and these were corrected and discussed in an effort to improve accuracy of reporting and such elements of writing skill as grammar, vocabulary, organization of thought, and style.

Among other additions was a literature seminar, for which trainees were required to read certain works and prepare to discuss their relevance to current life. Included in the list were works by Plato, Aristophanes, Kafka, and a number of American black writers. Much of the reading was done outside of the seminar and was undoubtedly difficult. In fact, considerable resistance developed as the students dug into the first assignment—Book VIII of the *Republic*, by Plato (who became "Pluto" in private conversation). Each student then was reassigned a portion to report upon, with emphasis on how it bore upon the student's own life. "Attitudes changed," Miss Lynch reports, "and what had been resistance became pride in having mastered so challenging an assignment." A maintenance man in the building, drawn by the classroom voices and his conversations with students, began attending the seminar and later wrote an insightful essay on Ovid's *Metamorphoses*.

The Center's second group of trainees also attended a series of after-hour lectures, offered to the Center's Negro staff, on the history of black Africa and of black people in America. Given by a black, somewhat militant, community organizer on the staff, the lectures are continuing. For the white members of the staff, Dr. Gardner has begun a similar series, preparing himself by an intensive study of source works. Asked whether the lectures were having an effect, the director said: "It seems to me the black people around here are much less apathetic than at the beginning. They are walking with a new dignity. As for the rest of us, I think we are rather astonished at the gaps in our information." After Doctor Gardner's series is completed, the blacks and whites on the staff will meet together in a series of discussions.

"One thing we learned with the first group of trainees," Miss Lynch sums up, "was that these selected people from the community were able to learn and do a lot more than we had expected. First we had thought of using them as expediters—people who help patients get their immediate needs taken care of: needs for money, housing, jobs, and so on. But we soon saw that they could probably work as therapists, too, so we emphasized the things they would have to know in such work. The second group seemed even brighter. By the second day they were really participating, answering questions from their own experience, asking questions, expressing concern about their community. Maybe the change was not in them but in us; we were more secure, more relaxed, more sure of what we were doing. Also we had more staff members willing to get involved in teaching. Some of them had hung back the first year; they felt sort of threatened. Then, too, none of us could tell them exactly what to do because we didn't know ourselves just what to expect."

One assistant who was among the first group of trainees and who helped train the second group agrees that there was a difference between the two. Most of the members of the first group were suspicious and mistrusting, she says, because the community had been promised many times many things that did not materialize. The second group was more expressive because, in part at least, they had had more opportunity to see the Center in operation.

In spite of the general feeling that the MHA program has worked at least reasonably, and in the case of some of the assistants surprisingly well, members of the Center's staff would like more hard and fast information about its results—a body of "scientific" evidence. So the director of training, instead of beginning a third course, is evaluating the program from the beginning and expects to come up with facts about the number of patients seen and the outcome, the other work done, the factors (such as personality and background) that make some assistants more effective than others, the effectiveness of mental health assistants as compared with that of psychiatrists and other professionals, and, possibly, desirable modifications in training and supervision.

The Center is a training spot for Temple medical students, too. All the junior year students spend 7 days observing the work of the various units and accompanying mental health assistants on visits to patients' homes. Thus they meet face to face problems most of them had never encountered. An elective program under which seniors may spend 7 weeks at the Center is planned.

The Future of the Mental Health Assistant

A big problem with the concept of using indigenous workers is "where do they go from here?" In the health field, as in the fields of science and education, a worker's income, during his early years at any rate, is based mainly on the amount of formal education he has had. It is the university degree that counts, rather than performance. Except for the specially endowed individual, a person may be paid less throughout his life merely because he lacks the degree traditionally considered appropriate in his field.

At the Temple University Community Mental Health Center, for example, psychiatric social workers with master's degrees do therapy; so do some mental health assistants who have not gone beyond high school but have had the experiences, developed the personalities, and received the special training, at the Center, that apparently fit them to do clinical work. The mental health assistants in their work with teachers and guidance counselors in the schools and with professional persons in other agencies sometimes encounter resentment because of their lack of academic qualifications. It is one mark of a good assistant that he can take this resentment and still work effectively with the person displaying it.

Doctor Gardner's tentative answer to the salary question is that one's education possibly should be taken into account but only if it has been relevant to what one is doing. There should be no additional payment for a degree simply as a degree. While wrestling with the question, Doctor Gardner has kept raising the salaries of the mental health assistants—from $3,900 for the training year, as noted earlier, to $5,000 the next year, to $5,500 the next. (A beginning social worker with a Master's degree gets $9,000.) However, every step in the process of obtaining money from the State for such increases he described as "a struggle."

The problem is partly one of classification. "We are trying for performance pay," explains one assistant who represents the entire group at meetings of the Center's executive council, "because the work we do is a sort of cross between that of the medical and the social work professions." She feels that if this work can be described—put down on paper as job descriptions, such as those used in civil service systems—the upgrading process will be easier. She, Doctor Gardner, and some other staff members are working on such descriptions. The present study of the assistants' effectiveness, which includes a comparison with that of professionally trained workers, should also help supply the answer.

The Day Program or "The School"

The signs on the porch pillars at 1420–22 West Ontario Street, interconnecting structures that house the Partial Hospitalization Unit of the Mental Health Center, say "Temple University Department of Mental Health," but the people who go there for help call it "The School." So it is—a place where a patient can learn not only some of the things that make him and his fellows tick but also a few of the usual classroom subjects. A patient is not called a patient, nor is a psychiatrist called a doctor. They are all "members" of this democratically run therapeutic community, and everybody calls everybody else by his first name. Dr. Frederick B. Glaser, the psychiatrist who heads it, thinks of the day center as "our place." "Ours is a nonmedical model," he says. "People are not considered sick. They have certain difficulties in their behavior which they must control." Talking to outsiders about the program, staff members refer to patients as "house members."

Medical terms like "schizophrenia" and "paranoia" are never used except when a new member is being evaluated, at a session attended by every other member. No communication between any two persons is considered privileged. The idea is that a person's difficulties are mostly in relation to other people and that these relationships can be examined in discussions, understood, and remedied. The concern is with current or recent events rather than with those long past. Any occurrence, any conversation, in the unit may be discussed in a meeting of the members and an attempt made to understand its significance. "There are, in essence, no secrets," says Doctor Glaser, "nor can there be if each person within the community is to be a therapeutic agent toward all the others."

"We all like one another and we all care," another staff member observes. "We all try, house members and staff, not to hide behind the image of what we should be. We try to be honest with one another and to say the things we like about one another as well as the things we don't like. And that's why I think this program works."

One day recently a visitor looking over the bulletin board in the hallway found this notice:

> For behavior contrary to the rules of this community, and after several warnings, the members of the community have voted to place Jim on Sudden Death Probation.

It developed that several times Jim had come to the Center loaded with alcohol. He had been let off with warnings. When he came in drunk again, he was placed on "sudden death probation" and assigned a probation officer, a house member who assumes responsibility for a person's behavior at the Center. The bulletin board was a little out of date: Jim had come in drunk just the morning before and been suspended immediately for 2 weeks.

After the suspension period, a psychiatric nurse predicted, Jim would apologize to the community, say he wanted to come back, and promise to handle his drinking problem. Then he would be placed again on sudden death probation for 2 weeks. "He needs the program," the nurse said, "but he has been manipulating and testing the group to see if it really would place limits on his behavior. And we had to, if only because he has a physical ailment that alcohol makes worse. In this case, drinking is a symptom of deeper problems. We know this because when he is drunk he comes out with certain things in his group that he evidently finds too painful to discuss at other times. When he is drunk, though, he is so belligerent that he doesn't gain any benefit from what he or anybody else says."

Could Jim or any other member be excluded for good?

"In this program he could," she answered, "because we feel that you can only do so much to treat somebody and their problem, and if they don't want to be treated, there is really no sense in their being here. They are not gaining anything from the program, nor are they giving anything. And our philosophy is that we are all expected to give to one another and to receive from one another."

Past the bulletin board, the hall led into a large, pleasant room whose main furnishings were two big tables, around one of which sat 10 or 12 women, most of them black, talking and knitting, and around the other about as many black men, plus a young white woman who had a tam-o'-shanter on her head and was dealing cards.

Since no activity had been scheduled for this period, the house members and some of the staff members had congregated in the dining room for talk and fun. The staff member with the tam-o'-shanter was teaching the men a new card game. She had borrowed the headpiece from a house member during lunch hour and had forgotten to return it. The owner jokingly reminded her about it at the end of the day. In addition to the dining room, the first floor has an office, a kitchen, and several small living rooms, one with a piano and another with a phonograph. On the second floor are offices and meeting rooms; on the third, beds for the men in the night program.

The day center has 30 active patient-members on its roll, most of whom attend full time, from 9:30 in the morning till 5 in the afternoon, Monday through Friday. A few others come a day or two a week, and some of the regulars have to come late or leave early. For the first 2 weeks, a new member must attend full time; then a program to meet his or her needs is worked out by a sort of executive council comprising staff members and the officers. who are house members chosen by the community. Perhaps one of the younger members, for example, should be taking certain courses in a regular school, or perhaps a mother should be spending more time with her children. Depending on what the member says is required and what the committee thinks is best for him, his hours in the program may be changed. At any one time at least 20 members are likely to be in attendance.

House and Staff Together

Most of the house members are psychotics or former psychotics. One man, 32, has been in mental hospitals or prisons for the last 20 years. He has almost no knowledge of how a person should conduct himself in society. When he thinks he has been offended, which is often, he goes into a temper tantrum and may storm out of the house screaming. But he comes back, and there is hope that he can be fitted into society.

Another member was found when the Philadelphia State Hospital searched for patients who came from the catchment area and were eligible, therefore, to be moved into the hospital's Temple University unit. This patient, a woman schizophrenic who had been living in a back ward, had lost the ability to socialize; she never even talked. When she came to "The School" after a short stay in the special unit at the hospital, she showed no interest in anyone, including herself. Now, after a year, which is longer than most day members stay, she is beginning to ask people questions about themselves, and the community is pleased.

One woman walked into the Psychosocial Clinic last winter and asked for help in staying out of a mental hospital. For the last five summers, she said, she had gone crazy and had had to be hospitalized. (Why become psychotic in the summertime? No one knows, but the woman has many children and a troublesome husband.) She didn't want it to happen again. In the day program, it didn't. She liked the place so much that she continued to attend several half days a week even though her schooling had ended. Many other persons who used to be full-time members drop in occasionally to keep up acquaintanceships.

For the staff—a pyschiatrist, a psychologist, a psychiatric nurse, a social worker, a part-time vocational counselor, and four mental health assistants—the day begins with a half-hour discussion of any problems that may have arisen and how they may he handled. Then the staff joins the members in a "government meeting," held in the dining room and run by the president, a patient. As in any other organization meeting, the schedule proceeds from "old business" to "new business," which may be a suggestion that some afternoon the group have an outing. The meeting ends with a confrontation period, described by the members as "pull-ups." If anyone has been behaving improperly, it is the responsibility of anyone who knows about it to report the situation. The accused person speaks up if he chooses, and other members question him if they choose, as they generally do. The "pull-up" may end with the discussion or proceed to some type of punishment, as with Jim.

Each house member is assigned to one of the three "house groups," which meet once a week for at least an hour. These are the basic psychotherapeutic groups. At least one staff member sits in with them; not, however, as a therapist, co-therapist, or leader, as staff people are usually considered in group therapy, but as a member. And as a member he is expected to be just as open about his problems and his feelings as he expects the other group members to be about theirs.

A member of one of these groups may ask the staff representative, "What is your opinion on this, Betty (or George, or whatever the first name)?" The house member may also remark, "You have a lot of nerve saying this, Betty, because that's not the way things are."

Staff members say that the groups are often right in their criticism of professionals. Some time ago, for instance, one of the professionals was facing a personal crisis, which her group knew about in some detail, just as she knew in some detail about each of the others' lives. The upshot was a "confrontation group," as the day center terms it, which is a meeting—sometimes called very suddenly—of the entire community in order to discuss some crisis or developing crisis. In this case the professional was told by a number of house members that she was blaming herself entirely too much, taking upon herself guilt she did not deserve, for the unfortunate situation in her life. "Sure, you made mistakes," one told her. "We all do. But you didn't make as many as you think. There is no reason for you to feel so guilty." The other staff members present did not disagree. The professional came to feel that the criticism had been right and the advice good.

"It is a comforting feeling," a staff member observes, "to know that there is a group of people who know you and like you despite knowing you or because of knowing. It is essentially what therapists say to people they see in treatment: 'Tell me whatever it is you have to tell me about yourself and I will like you anyway.' But the therapist doesn't tell the patient about himself, and here you do and it can be a frightening feeling, because you think 'Oh, no, if I say this then they are not going to like me anymore.' But they do, and what a group member shares, helps all of us. Everything we do here we hope is therapy."

Says Doctor Glaser: "To many, the democratic ideal implies equal influence of each upon each, that no man shall rise above his fellows.

In practice, hierarchies form within all human groups. Our feeling is that hierarchical structure is neither good nor bad in and of itself. It depends upon the basis of the structure. If its basis is professional rank, that is one thing; if it is what could be termed 'right action,' that is another. That is, if the doctor is right, it is not because he is the doctor, but because he is right. His being a doctor may in some way enable him to be right, but then, being a patient may enable another person to be right. In most traditional, authoritarian medical settings, the doctor is right because he is the doctor. It is this that we seek to avoid."

A patient's experience with group process begins the day he is admitted, when a staff member and the house officers greet him, ask him about his problems, and tell him about the program. A new member may admit with some shame that he often hears voices, in which case one of the house officers may say, "Well, when I came here I heard voices too, and I thought I was crazy, so I know how you feel. But we'll help you."

Two weeks later occurs an "initial evaluation," in which the entire community takes part. The new patient's history is read aloud and the diagnosis given. If the new member asks why he has been called "schizophrenic," "depressive," or whatever, he is told. In much greater detail than 2 weeks earlier, he is asked about his life and his feelings. He is also asked what he thinks he has been doing at the Center, and the other members comment on how they think he has been doing. In his presence, the members then discuss plans for his treatment.

One recent admittee complained that nobody liked him, that he never got along with other people, that he couldn't talk to other people, and that often he didn't care whether or not he talked to them. The meeting agreed that an effort should be made to involve him in closer relationships with others. A house member said, "I commit myself to form a relationship to John." Two others joined in. They were volunteering to talk to John, to help him learn how to talk to them and to other persons—essentially, to become a friend of his.

What if the new member doesn't want to have anything to do with these committed persons who are trying to help?

"Well," says a staff member who has often observed the process, "if they find him objectionable, they'll say something like, 'The reason nobody wants to talk to you is because who can stand you? If you want people to like you, you have to change. Why are you such a miserable creep?' Some days," the staff member adds, "we have real loud arguments here."

The Center finds that such candid treatment works with most of its patients, whatever their diagnosis. A few refuse to change—perhaps because they don't want to give up their sick role—and these usually drop out. Occasionally a "confrontation meeting" will agree that a member ought to have individual therapy or inpatient treatment, which is then arranged.

At "ongoing evaluations," one a month for each member, progress made since the initial evaluation is reviewed by the whole community and plans for treatment are changed as seems desirable.

"Multiple Interlocking Group Therapy"

In addition to the psychotherapeutic and the confrontation groups, the Center's day care program is based on about 20 others. The program's director describes it as "multiple interlocking group therapy." Formal one-to-one interactions between house and staff members are prohibited. Informal one-to-one interaction is expected to occur at times and does occur. For example, a staff member and a house member may exchange jokes or family news at the soft-drink machine, or a house member and a staff member may go shopping together. But all the most significant interventions in the treatment program are intended to take place in the various group settings.

All the groups are for men and women alike except two—the men's group and the women's group, which meet in separate rooms once a week to discuss what they please, which, more often than not, pertains to sex. Some men, it developed, believe that during the menstrual period a woman should not do any cooking lest she make the family sick. Other misconceptions have been brought out and corrected.

The activities group, in which house members may or may not choose to participate (most do), meets in the basement of the church, and the participants do whatever they feel like doing. Some women knit, others draw or paint; the men paint, work on leather, and will begin woodworking as soon as the tools come in. House or staff members with some skill in a craft or hobby help others acquire it. But there is nothing known as occupational therapy. A staff member who was head nurse at a State hospital for several years reports that the attitudes of the house members are much different from those of the hospital patients: most patients regarded occupational therapy as just something else they had to do while at the hospital; members of the day center, on the other hand, enjoy the activities program, both because it gives them an opportunity to do something creative, she thinks, and also because it is voluntary.

In the instruction group, the house members decide what they would like to study, and they read aloud and discuss some of the materials brought in to help satisfy their desire to learn. "Classes" are guided by a staff member or a volunteer teacher from the university. Contrary to the usual idea that the residents of poverty-ridden communities don't care about learning, the day center has found its house members extremely interested. First came informal study groups in general history and geography; now there is one in Negro history and another in psychology, both of which meet twice a week. Instruction in writing, reading, and arithmetic is also available twice a week, and house members who are relatively far advanced in these subjects are encouraged to help those who are not. Individual tutoring with someone from the university is also part of the program.

A vocational group offers house members an opportunity to discuss the problems they have had in seeking and keeping jobs, the more effective ways that might be employed in dealing with these problems, and the members' suitability for vocational training programs and for regular work. Closely related is a psychological assessment group, which uses the results of tests, information about work experience and personal background, and knowledge of each individual's behavior at the Center to assess members who have expressed an interest in training. A staff member with vocational counseling experience sits in with each of these groups.

Other groups include: one for the adolescents in the house; one for members with drinking problems; one for married couples, which meets in the evenings and is for couples using any of the services of the Community Mental Health Center; "the quiet group," which is for people who have difficulty talking to others and is run by one of the mental health assistants who also has difficulty in this respect; and the analytic group, operated according to the principles of psychoanalytically-oriented therapy and attended by some of the members, its primary aim being to provide information about the usefulness of this type of therapy for members of a community like the one being served.

Probably the most important element in the day program, the staff hazards, is not any one, or even all, of the groups mentioned but the informal, spontaneous interactions among the house members and between these members and the staff. Care is taken to provide a little "space" in each day's programs—10 minutes here, half an hour there—so that exchanges even more informal than in most of the scheduled groups can take place.

There is a feeling among the staff, but not yet proof, that more of the house members make a successful adjustment, after their discharge, than patients discharged from State hospitals. "In a hospital," one staff member explains, "the sick role is not discouraged; people are expected to act crazy and they do. In many cases there is this attitude: 'You are leaving us, but you will be back'—and they do come back. Here people work with the attitude: 'You may have an emotional problem now, but we will all work together with you so that you don't have to go in the hospital again or so that you don't have to return here. You can go out and become a productive human being, which is what every person should be.' "

Influencing The Police and Other Community Caretakers

Though the local publicity has emphasized the emergency services, the Director of the Temple University Community Mental Health Center and his associates started at the very beginning to develop an influential consultation and education program. (Included, but financed by a separate NIMH grant, was a training program for certain community workers that got under way even before the Center was open for service to the general public.)

The educational program for policemen offers two main courses. One, given at the Police Academy, for all rookies, comprises four 2-hour sessions to help the new men recognize and handle mentally ill persons. Most sessions begin with a film made by the New Orleans Police Department and the New Orleans Mental Health Association, dealing with problems often encountered by the police that have their roots in mental illnesses. The films used in Philadelphia cover schizophrenia and the behavior associated with it—alcoholism, depression, and suicide.

The Center has found the films considerably more effective than lectures. "These police trainees are very concrete people," a staff members explains. "They want action as much as possible. They don't tolerate lectures very well."

After the film, the rookies break into two or more groups, discuss what they have just seen and heard, and ask wide-ranging questions, concerning not only such matters as handling a threatening and obviously disturbed person but also anything else a trainee is curious about, which has included extrasensory perception and astrology.

About 400 policemen-in-training have been reached by this program, through 1968.

In the second phase, policemen from the three districts in the catchment area have been coming to the Center in small groups to talk about the area's problems and to learn how the Center can help. The captains and lieutenants come first; then the other officers and the men on the beat.

The extent to which these programs have benefited the police and the people they deal with has not yet been assessed, but in one respect at least the Center has been an undoubted blessing. Formerly an officer who picked up a disturbed person in North Philadelphia had to take him to Philadelphia General Hospital, as much as 30 minutes away. Now the officers takes him to the Crisis Center, 10 or 15 minutes away at the most, and, because there is no waiting, is back on the street in a few minutes.

Should civil rights disturbances develop in North Philadelphia, the Center believes that its contacts with the police and its services to the rest of the community will enable it to act as a mediator.

Public health nurses.—The work with the police is part of the Center's general education program, under which it also gives monthly consultation conferences to the 45 public health nurses in the area. The nurses meet in three separate groups with a psychiatrist, a social worker, and a psychiatric nurse and discuss patients, or members of patients' families, who seem to need more help than the visiting nurse knows how to give. The discussions lead to concrete suggestions, which are usually ones the nurse herself can carry out but sometimes call for sending the troubled person to the Center.

Seminarians.—Twenty-eight students, representing five denominations, who attend seminaries in the Philadelphia area spend a day or day and a half a week at the Center and have group and individual discussions with members of the staff. The program is intended to make them more conscious of social problems, particularly those of a ghetto community, and more sensitive to psychopathology and better informed about the resources, in some cases clergymen themselves, for treating it. Since most of the students are white, the Center brings in black clergymen to talk with them; it also gives them experience in a satellite clinic, where they meet patients and eventually counsel some of them under a psychiatrist's supervision.

Clergymen.—From 10 to 20 Negro clergymen came to the Center at least once a month last year for seminars on mental health and related problems. At one meeting, a police officer from the civil disobedience squad talked about community-police relations. At another, a minister who had been counseling young men about the draft discussed the issues involved. Other topics included alcoholism, pastoral counseling, the Center as a place of help for troubled parishioners, and specific cases on which the pastors needed advice. Some of these ministers still come to the Center but primarily to help work with the seminarians.

Mental health training program.—With the help of an NIMH training grant, Center personnel offered mental health courses to workers in nine community agencies, including parole, probation, education, social service, welfare, recreation, and employment. None of the trainees had graduate degrees in psychology or social work. The curriculum, developed mainly by the psychologist, the psychiatrist, and the social worker who constituted the faculty, was intended to make the students more sensitive to the area's sociocultural and psychological climate and more effective, as a result, in their work. The first training period consisted of 30 sessions, an hour and a half each, spread over 2 years; the second, 30 sessions confined to 1 year. Approximately 120 persons, or 75 percent of those enrolled, completed one of the programs. The agency directors report that most of these have shown an increased desire and ability to help. A manual for use by mental health centers or other agencies planning a similar program, in whole or in part, is being prepared.

For some months, too, the Center cooperated in the training of teachers in one of the country's pioneering vocational training programs for hard-core unemployed people, primarily Negroes. This is the Opportunities and Industrialization Center (OIC), started by the Rev. Leon Sullivan and supported in part by a grant from the Office of Economic Opportunity and in part by gifts from industry and individuals. The Temple Center undertook to teach some of the relatively untrained teachers at OIC why people, particularly the ones they were meeting, behave as they do. The Center has dropped this project for lack of staff but hopes to renew it.

Consultation services for the schools of North Philadelphia are also available. The Center estimates that in 2 years about 100 teachers, counselors, principals, and others from the schools have sought advice on how to work with a troubled child and that about 500 troubled children and adolescents under age 16 have been seen in direct service by the Center. The director points to a situation that probably adds to the mental health problems of the community: the high schools are on half-day sessions, so even a youngster who isn't looking for trouble has plenty of time to get into it.

All the consultation services have been given without charge. "If we had waited to work out a schedule of fees with the police department, say, or the Board of Education," the director explains, "all of us might still be waiting—the Center for the money and the police, the teachers, and the rest of them for the services which both we and they think have been helpful." This policy probably cannot be continued. As Federal staffing grants decline, the State—under the arrangement between it and Temple University—has to pick up more and more of the bill, and it has asked the Center to develop a fee or contract system for its consultation program. Incidentally, most patients, too, are served without charge, because they cannot afford to pay.

Working in the Community

A section of the Center's Consultation and Education Unit is working in a number of ways to improve the community and, thereby, it hopes to alleviate and prevent some of the problems that undermine a person's health—physical, mental, or both. This is the Community Organization Section, which is staffed almost entirely by black personnel, including a social worker, a former teacher, and a number of mental health assistants.

One of the greatest social ills often associated with psychopathology is poor housing. A Center patient living in a nearby apartment reported that her building, a converted three-story residence, and three others owned by the same landlord were in bad states of disrepair. The Center asked the city for quick action. The license department posted the four buildings as unfit for habitation and ordered the landlord to bring them to standard. Meanwhile, the rent is being paid to the Tioga Tenants Council, a group that a mental health assistant helped to organize, as escrow agent. After 6 months, if the repairs have not been made, the money is to be returned to the tenants. The Community Organizations Section expects to take similar action in other cases.

Along with the Tioga Tenants Council, mental health assistants from the Center are also working to acquire five dilapidated houses, renovate them, and sell them to low-income families. This project is seen as one step in an effort to stablize the community.

Ironically, members of the citizens group were beginning to say they did not want any mental patients living nearby. As everyone knew, half a dozen persons discharged from the State hospital had recently taken up residence in a house bought for such persons by a friend of the mental health movement. The complaints reflected an attitude found widely in the community but which were unexpected in this group because it had been working with the Center on the housing situation. When a mental health assistant heard the rumblings, she enlisted the aid of other staff members ~~in~~ f explaining mental illness in general and the needs of discharged patients in particular. The group was satisfied; the rumblings stopped.

Several other mental health assistants surveyed an especially run-down neighborhood and found that one of the services the residents most wanted was a day care center for children. The MHA's drew up a proposal for such a center, and Dr. Gardner hopes that one of the large industrial firms in or near the area will contribute the necessary money. Initially the Center would be for children aged 3 to 5; eventually it would also be for older children—a recreation house where they could come after school. A health clinic would be added. Some 35 families have taken part in the initial planning.

Political awareness is another goal of the Community Organization Section. During the 1968 campaign, one mental health assistant got the city to lend her some voting machines, and she set up meetings so that people could practice using them. She also arranged for "meet your candidates" evenings.

Before Christmas, another assistant asked everybody in the Center for a list of unusually needy families. Then she called upon the business men of the community for donations. The money collected, about $140, went for food and toys.

To combat the apathy characteristic of ghetto neighborhoods and give residents an opportunity for self-expression, an "activities therapist" has organized a drama group ("The Playward Bus Company"), a choral group, and a dance group. A few patients are members. The groups perform in church and other auditoriums throughout the city, and the theater company has been on TV. The therapist, a former professional entertainer and one of the few men to have become MHA's so far, has conducted courses in language skills for the other assistants, and he hopes to develop local talent for the professional theater.

Another MHA in this division—a young white man with a year of college background—edits "The Mentality," a mimeographed newspaper containing news and editorials about the Center. Though addressed now only to the staff, it is to become a community paper.

The patient's advocate service also comes under this unit, partly because in certain cases it will involve agencies from the community. For instance, one patient living in an apartment where the heat was cut off on a winter's day called her therapist, the therapist called an advocate, the advocate checked the situation and advised the patient what steps she could take, and the patient took them.

What is considered really new about the program, though, is the establishment of machinery for considering a person's dissatisfaction with the therapeutic services he is receiving. With the project just getting started, only a few complaints have been received. One came from a man warned that he was facing ouster from the day program for irregular attendance. Perhaps he had not paid attention when the regulations were explained. Or perhaps staff members had not explained clearly enough, or extensively enough, what was expected. In any event, the advocate informally discussed the patient's case with some of the Center's higher-ups and carefully went over the rules with him herself. The patient was retained and at last reports was doing well. Generally, complaints about services will be reviewed by the newly-established Community Patient Care Committee, whose six members live in the catchment area, and the committee's recommendations for improvement will go to the Director.

The first of the advocates—there are now two—is a former clerical worker who took the second training course for MHA's. A few of the psychiatrists and other professionals have made it clear they do not like the program. "When I think about it," this advocate remarks, "I get a litle scared. Here are people who have spent years in training and have doctors' degrees, and I only finished high school. So maybe I have a lot of gall to say, 'I'm questioning this.' "

Gall or not, Doctor Gardner thinks that a mental health assistant or even the patient himself may sometimes have a clearer idea than the professional of how to meet a patient's needs. And even when the patient is wrong, he has the right to be heard. The advocacy program may keep the patient in treatment long enough for him to benefit, and almost certainly it will push back the horizon of everyone concerned.

Looking Ahead

When the Center opened, it had an advisory board of people who lived or worked in the community, some of them typical of the residents but most of them professional persons. The board broke up during the first year, Doctor Gardner reports, because it kept pressing for additional services—more work with addicts, alcoholics, old people, and delinquents, and more concern with housing problems.

If the emergency service and consultation-education programs were to be carried out, the Center had neither money nor staff for the additional services the board wanted. However, with the graduation of two groups of mental health assistants and the prospective availability of funds from voluntary organizations, it is now planning to help meet the needs for more services in these fields and to develop services in other fields. It recently established a new advisory board of community residents.

Some of the original problems remain. There are still people who complain that the Center is "too white," or that it was established just to "soften up" the residents so they wouldn't riot (Philadelphia has had no major racial trouble since 1964), or that what is really needed is not a mental health center but more housing and employment.

The staff feels that the community still distrusts, even hates, the University partly because it has acquired, and is still acquiring, a number of houses for its own use but mainly because the community senses an attitude of indifference. In the matter of housing, for example, the University has not consulted with the community about plans to take over an area nor has it helped find homes for the people who have to move. Making the situation worse, landlords often quit maintaining a property when rumors start that Temple has an eye on it. There is resentment, too, that the University is overwhelmingly white—several hundred Negro undergraduates last year, the Center notes, out of a total undergraduate enrollment of over 20,000. The University explains that it cannot find many black students who are qualified. There is a further complaint that Negroes admitted to Temple's Medical Center for emergency care may be treated with less dignity than whites. Some of the interns and residents there, remarks one M.D., seem to resent having to treat poor black persons. He characterizes the care of Negroes in the accident ward as, in general, "terrible"—from the standpoint not of its technical but of its human quality. The Mental Health Center feels that its job would have been easier if the University-community relations had been better.

Other problems listed by staff members include:

- A staffing problem at the Temple unit of the Philadelphia State Hospital. The professionals and mental health assistants there are paid by the Center, but the attendants are under civil service and their salaries are low.

- The Center's need for more space. The director of the Crisis Center and the Psychosocial Clinic puts it this way: "We are working under extremely cramped conditions. We are strangling."

Though he worries about these problems, the Center's director believes they will be solved eventually as plans for making the Center of even greater service to the community are carried out.

In the immediate future are these developments:

A broader fight against addiction.—With the help of the Greater Philadelphia Movement, an organization of business and industrial leaders dedicated to improving the city, the Center initiated the purchase of a house to begin a residential program for addicts modeled on that of Daytop Village, in New York City. The Daytop program, which developed from a project supported by NIMH, sets up a miniature community of addicts and former addicts. Members find their way to more responsibility, a greater degree of independence, and increased esteem through a change in those attitudes—toward others and themselves—that helped foster the drug habit. Members of Daytop's staff developed the Philadelphia project in cooperation with staff members from the Center. In addition to the support of the Greater Philadelphia Movement, it is hoped that money will come from other voluntary agencies and from the Federal anti-poverty program.

Doctor Gardner expects as well to institute a withdrawal program for addicts, and he will soon open a weekend hospital—in the same building used for the day and night programs—for certain patients addicted either to alcohol or narcotics. He points out that all addicts are not the same. Some apparently require hospitalization and aftercare. Others can be withdrawn and treated under an outpatient program, but some of these need additional help to carry them through the worst periods of their struggle to remain abstinent, the weekends. Still others seem to require the intensive, continuous group therapy of a Daytop kind of program.

More work with young people.—As noted earlier, the Center works directly with young people and also indirectly—through teachers, families, and the Young Great Society, a body of young Negro men formed to keep teenagers out of trouble and assist those already in trouble. Plans for expansion include:

- An increase in group therapy. The Center now has several groups for adolescents and one for first-graders. This last is an activities group, in which the children play and work together, the goal being not only to treat emotional problems but also to correct deficiencies in verbal, reasoning, and social skills. If the children in this group show significant progress, similar groups for youngsters of other ages will be established.

- A project aimed at helping young parents; (*a*) prepare their preschool children for school; and (*b*) understand what goes on in school so that when a child enters the system, the parents will have the confidence to talk with the teacher about problems that arise. This program has been initiated but will be expanded.
- Greater involvement with juvenile gangs, particularly the three whose members are known to use drugs. "To be involved," says Doctor Gardner, "means you have to help. We know from the boys we've talked to that many of the members really want to do something and have made a number of attempts to get jobs. We're going to have to help them." He hopes to open one or more storefront satellites staffed in part by gang members themselves and directed to meeting the employment and other needs of young people, either directly or through other organizations. In this way it may be possible to reduce delinquency and, in particular, to get young alcoholics and drug addicts under treatment. Work with one gang has helped it establish a business of its own in carpentry, repairs, and cabinet work.
- A broader job-training and job-getting program. This involves more effective efforts to use such existing resources as the Federal-State vocational rehabilitation system and the National Alliance of Business Men, which has set up employment and training-on-the-job programs for the hard-core unemployed. One plan here is to establish two "transitional workshops"—residences in the community where some of these unemployed who have been patients at the Center can learn the attitudes and skills (such as getting up on time, catching the right bus, working with other people) that will make them more acceptable to a trainng program director and more likely to stick with the training program and the job.

Better care for older people.—The Center treats a number of geriatric patients brought in by the police because they have been wandering around, or by relatives because they have been making a disturbance. Most of these now have to be sent to the State hospital because their families are unable or unwilling, or both, to give them proper care. With adequate backup services—to be given through home visits and through consultation with boarding homes that accept State hospital patients—Doctor Gardner believes that many of these patients could be maintained in the community. He seeks the additional staff members that will be needed, and he plans to establish an activities center, privately financed, so that elderly people have more opportunity to keep, or regain, their emotional health.

The Director adds: "With adequate backup services not only for geriatric patients but also for addicts, delinquents, everybody with a mental health problem, and with the Center's increasing involvement in the community and the community's increasing involvement in the policymaking of the Center, we'll have a real community mental health program."

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CMHC Staffing Grants: MH 00005
MH 00158
MH 00269

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CLINICAL STUDIES IN ALCOHOLISM

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Perhaps the cruelest of the myths surrounding the myth-ridden subject of alcoholism is that alcoholics really do not want to be helped. Among the general public the idea is backed by an essentially moralistic line of thought that starts from the fact that drinking is an act of volition, then proceeds with the observation that a person who drinks too much not only consistently lies and denies it but compounds his callous self-indulgence by ignoring the pleas of family and the advice of friends that he see a doctor. A great many medical professionals also believe in the myth although their reasons for doing so are quite different. Most recognize that alcoholism is a severe behavior disorder for which there are certain treatments—specifically, psychotherapy and drug therapy. But, they say, rarely do alcoholics present themselves for treatment, and those who do come or are coerced into coming do not stay in treatment. The typical alcoholic is just not sufficiently motivated, the therapists say, by which they mean "alcoholics really do not want to be helped."

This view has now been effectively challenged by Dr. Morris E. Chafetz and his colleagues at the Massachusetts General Hospital. In a series of studies and demonstrations made over the past 10 years, Doctor Chafetz has shown that alcoholics are as motivated to seek help as are patients in other diagnostic classifications of psychiatric disorder, and that they will indeed enter and stay in treatment programs tailored to their needs. The fault, the investigators discovered, lay not in an absence of motivation in the patients but in misunderstanding and antipathy in the caretakers.

The investigators began their systematic work on this question as a consequence of uncovering the dismaying fact that less than 1 percent of the alcoholic patients seen in the MGH emergency ward made even one contact with the hospital's Alcohol Clinic. At first glance, Doctor Chafetz recalled, this evidence seemed to confirm the old notion that most alcoholics, even when given the opportunity for rehabilitation, simply do not choose to get expert help. But Doctor Chafetz and his associates were disposed to look more closely into the causes of failure to seek treatment. Specifically, the investigators began by asking themselves two questions: What are the characteristic personality traits of alcoholics that may decisively influence their willingness to make a therapeutic alliance; what is the impact on these traits of encounters actually experienced in the initial therapeutic setting, that is, in the hospital's emergency ward?

The consensus of workers in the field today is that excessive, uncontrolled, self-destructive drinking is a behavioral symptom manifesting a wide range of disorders. Although every alcoholic is, of course, a unique personality, certain psychodynamic features are thought to be more or less common to all. From these, students of alcoholism have constructed a theoretical psychodynamic formulation of the disorder, which may be summarized briefly as follows. The three outstanding features, as Doctor Chafetz has noted them, are deprivation, depression, and denial. Early childhood deprivation of a critical emotional relationship—most frequently involving the mother—is found very often in the histories of alcoholics. This loss, in turn, is conceived as the root cause of the prevailing emotional state of alcoholism—depression—against which the alcoholic uses denial as the primary defense strategy. Alcoholism is thus seen as a symptom of a primitive personality disorder that originated in the preverbal stage of an individual's emotional development. The characteristics typically associated with such disorders are low self-esteem, minimal tolerance for frustration, marked dependency, and a great difficulty in relating to other people coupled with a supersensitivity about being rejected by others.

"Most primitive disorders," Doctor Chafetz noted, "are treated within the protective and supportive confines of an institution [e.g., schizophrenia]. Not only does the addicted alcoholic suffer from a primitive psychological disorder, but there is a great tendency to act out conflict situations. Hence the attempt to treat him psychotherapeutically on an ambulatory basis can be fraught with danger."

A significant source of the danger rises from the therapist's rather rigidly held concept of his proper role and behavior vis-a-vis a patient. He sits back and waits for the patient to come to him, to talk to him, to reveal himself, to gain insight while he, the therapist, maintains a posture of patient, passive sagacity and tempers his readiness to understand with a sharp lookout for signs that he is being manipulated into abetting the patient's illness. During the initial contact, particularly, he is likely to be silent and watchful with an air of, at most, friendly impartiality.

But, Doctor Chafetz has asserted, with an alcoholic patient a therapist must be prepared to step outside the safe bounds of this traditional, nondirective role. As with all patients suffering primitive personality disorders, prompt establishment of an unmistakably positive relationship is critically important. From the very first meeting the therapist must be openly and warmly interested in the patient's wellbeing. He must reach out to the patient. Moreover, he must make his concern explicit by taking an active hand in helping the patient solve urgent problems of daily living.

"It is not what we say to the alcoholic but what we really feel and do that will determine the outcome," Doctor Chafetz noted. "Alcoholism, as a preverbal disorder, must be treated by action—by 'doing for' the patient. For example, if the patient requires physical treatment then hospitalization and medical care should be readily provided." For many, the sorest needs are quite rudimentary—a bath and shave, a meal, a room to live in, a pair of shoes, or a set of dentures.

The incessant, insatiable demands of alcoholics and the fundamental hostility that colors all their relations can quickly become points of rupture and failure. Few people can be expected to endure this kind of emotional barrage regularly and not respond with anger. To sustain the ideal treatment ambience of warmth and acceptance, then, Doctor Chafetz has recommended a team approach in which the emotional burden that the alcoholic patient presents can be spread out, as it were, over more than one caretaker.

In sum, this was what the investigators regarded as a sort of minimum basis on which the alcoholic could begin the arduous task of rehabilitation: A continuous relationship with a team of caretakers who are accepting of him, warm and supportive from the first and throughout all subsequent meetings, and who will give him all reasonable help with his immediate problems of living. The Boston researchers then turned to examine in detail the actual conditions experienced by alcoholic patients when they enter the treatment scene through the doors of the MGH emergency ward. They did not have to look very far to discover why it was that so few alcoholics followed through on the referral from emergency ward to Alcohol Clinic.

The patient entering the emergency ward must be seen by six or more people including the admitting clerk, the chief medical officer, and the discharge officer who talks about finances. Once his immediate medical or surgical problem has been attended to, the patient who has been diagnosed as alcoholic will be referred to the Clinic. Only if he has not been disheartened by the waiting and the questions and has not decided that he is being shuffled about like an unwelcome parcel—big *ifs* for someone with a low tolerance for frustration and little self-esteem—will he actually go upstairs to the Clinic. There he finds that six or seven other people want to see and question him. Eventually he can make an appointment to meet the resident psychiatrist for evaluation. If he comes to this meeting and is accepted for treatment, he is placed on a 4 to 6 weeks' waiting list, after which time he will finally meet his permanent therapist.

In addition to having to endure this protracted procedure, which might well daunt the stoutest motivation, the alcoholic patient, especially if he is either intoxicated or in alcoholic withdrawal, is likely to be dirty, unkempt, and odorous. He is sick and suffering, but this is too often interpreted by the caretakers as the justly deserved outcome of his having indulged in the supposed pleasures of drink. Any one of the several people he meets in the caretaking setting may reveal their distate at his appearance and their indifference to his distress; any of them may react with outright anger and hostility.

"We found, on the one hand, that the alcoholic needs a continuous nonfragmented, accepting relationship," Doctor Chafetz said. "And we saw, on the other hand, that he was actually experiencing the exact opposite at just that point in time when his motivation for treatment may be strongest, that is, when he is in the crisis that brought him to the emergency ward."

With this evidence in hand, the investigator and his associates decided to work out a new and rational approach to alcoholic patients, one that would specifically avoid the circumstances that seemed to be blocking the patient's path to treatment. The development of their program rested on certain fundamental premises. First, an explicit conception of the disorder was needed. The researchers employed a widely accepted definition in which alcoholism is regarded as a chronic behavioral disorder manifested in drinking that is excessive in relation to the norms prevailing in the drinker's culture and that interferes with his physical well-being or with his social and economic functioning.

Second, the researchers employed a concept of crisis developed by Dr. Erich Lindemann. The implications of this concept for their own program were, first, that when a person initially makes a medical contact, his act springs from a situation of physical, psychological, or social crisis in his life; and second, that motivation for treatment is higher at a time of crisis than at other times. Thus, the investigators were prepared to assume not only that there is motivation to seek help for the immediate complaint, but also for the basic problem which generated the complaint. For example, if an alcoholic entered the emergency ward complaining of severe gastrointestinal upset, the investigators would assume that the patient's motivation to get help for the upset is strong and, further, that the patient is also more motivated than he has been to accept help for the underlying problem with drinking. "The mere fact of admission to the emergency ward," they noted, "furnishes the opportunity to effect a rehabilitative relationship with the alcoholic with a more-than-usual chance of success."

Finally, a logical extension of these concepts suggested a specific set of general caretaking conditions, which are as follows. The alcoholic's low self-esteem must always be borne in mind, and caretakers must explicitly accord him ample respect and treat him with dignity. His extreme dependency needs must be recognized and constructively utilized as a means to gain his trust. The patient's standing in his primary social network and in the larger community are key elements in his condition; help with this aspect of his life must be rapidly mobilized. The same team of caretakers must initiate and follow an individual patient through treatment; one or another should always be available when the patient asks for help. As much as possible, help should be offered in the form of action rather than words.

Would an approach based on these conditions of care be more effective than customary approaches in getting alcoholic patients to enter a therapeutic alliance? Doctors Chafetz and his colleagues designed a clinical research study to find the answer. At the same time, they took the opportunity to study the sociocultural characteristics of a group of alcoholics.

In a small preliminary study the investigators discussed their ideas with the caretaking personnel that would be involved with alcoholic patients and, with 15 patients as pilot cases, worked out practical methods of treatment and data collection. An important task accomplished during the pilot period was the compilation of completely accurate, up-to-date information about the community resources available for referral and the establishment of good liaison with these agencies.

In the main study, 200 alcoholic patients were selected as subjects; half were experimental and the other half were controls. The first 20 patients diagnosed as alcoholic by the chief medical officer in the emergency ward at the beginning of each month were assigned, alternately, to the experimental and control groups. Each experimental patient was then assigned to a treatment team that would be putting the investigators' ideas into practice, while control patients simply received the care routinely given alcoholic patients entering the emergency ward. At the end of 1 year all subjects were followed up to determine whether they had made at least one visit to the Alcohol Clinic and, if so, whether they had formed a successful therapeutic alliance. This, in turn, was defined operationally as five or more visits to the Alcohol Clinic (in other clinical research of this sort, a criterion of three or more visits to a therapist is generally accepted as evidence of a therapeutic alliance.) Patient contact during the course of the study was assessed by making a note of every self-initiated face-to-face meeting between caretakers and patient in the clinic, for example, scheduled interviews and attendance at group therapy meetings. The investigators predicted that there would be greater incidences of initial visits and of five or more visits to the Alcohol Clinic among subjects in the experimental group compared to control subjects.

The heart of the new approach was the treatment-catalyst teams, each consisting of a resident psychiatrist and a psychiatric social worker. These caretakers met the alcoholic patient as quickly as possible after his arrival in the emergency ward. They let him know they were *his* psychiatrist and *his* social worker, and followed him closely throughout his stay in the ward. If he had to wait, they saw to it he was made comfortable and was offered coffee. They smoothed his way with other hospital personnel and, by their own evident concern, attempted to forestall attitudes of indifference or hostility.

Once the patient's medical complications had been attended to, psychiatrist and socal worker concentrated on an evaluation of the patient and his primary social network—getting information from family, friends, employer, and others who could help—and worked out a long-term treatment plan. Because the MGH has very limited inpatient facilities for acute alcoholic patients, those who need inpatient care must be referred to one or another of the State institutions that provide such care for voluntary patients. When this was required for their patient, the team made the telephone arrangements that cleared the patient's entry, and he was strongly urged to come back to the MGH after discharge. Most patients needed a variety of social or welfare services that were available outside the hospital, and the social workers saw to it that the patient got the right referrals. Advance telephone calls made certain the patient could be helped and was expected. Followup calls not only ensured that the patient would not be forgotten but built a sound working relationship between the MGH and the network of community agencies.

In short, the main thrust of this experimental clinical method reflected a new approach in medicine, namely, that primary responsibility for establishing a treatment relation rests with the caretakers rather than with the patient. Moreover, the kind and quality of the care given in the *initial* contact is deemed critical; it is at this point that ultimate therapeutic success may be gained or forfeited.

The results of the study were quite conclusive. Sixty-five percent of the experimental group made one visit to the Alcohol Clinic as compared to 5.4 percent of the control group. Similarly, 42 percent of the experimental group, compared to 1 percent of the controls, made five or more visits to the Clinic. Moreover, 23 percent of the experimental subjects made one to four visits compared to 4.3 percent of controls.

The researchers were also interested in knowing how sustained the treatment relationship became among subjects who visited the Clinic at least five times. They found that of the total 42 patients, 25 made five to nine visits, 11 made 10 to 19 visits, and 6 patients came to the Clinic more than 20 times. This was a remarkable accomplishment when it is recalled that, prior to the initiation of the new approach, virtually no patients came to the Clinic on referral from the emergency ward. Further, when the investigators compared their results with results obtained by researchers working with other types of psychiatric patients, they found that their clinical approach was about as effective in establishing treatment alliances with chronic alcoholics as traditional approaches have been with general psychiatric cases.

The success achieved with the alcoholic population was even more impressive when the subjects' social histories were taken into account. The researchers had compiled detailed social histories on each patient admitted to the study. These inventories included information on such items as marital stability, occupational history, the use the patient and his family made of public welfare and other social agencies, and arrest history.

The men were found to be middle-aged, on the average, and eight out of ten were either single, separated, divorced, or widowed. Less than half reported being employed, and more than half were brought into the emergency ward by police. Only 17 percent reported subscribing to any sort of medical insurance. It was perhaps most revealing that 29 of the 100 experimental subjects were homeless at the time of admission (one man gave his address as the Boston Commons, a public park in the center of the city). Another 40 lived alone or in social institutions.

The study population, then, consisted largely of men existing outside the social fabric of the community, most of them shifting haphazardly along with no roots in family life or in meaningful work. As a group they fit the classic description of skid row alcoholics. To have achieved such good results with these supposedly hopeless cases was indeed a convincing demonstration of the validity of the new approach to alcoholics.

Who is Labeled "Alcoholic"

In addition to demonstrating the effectiveness of their rational approach to fostering treatment relations with alcoholic patients, the study gave the investigators an unexpected opportunity to explore certain complex issues related to the diagnosis of alcoholism. Not long after the study began with the monthly selection of patient-subjects in the emergency ward, it appeared to the investigators that many patients who could be considered alcoholic were not being diagnosed as such and not being assigned to the study by the chief medical officer. This was an intriguing observation, so when the study was completed they decided to look into it more closely.

The researchers went back to the emergency ward daily logbook to examine the records of all patients seen during each of the 10 subject-selection periods. Then they called in for review some 3,000 medical records, one for every male aged 16 or more who had come through the emergency ward during the relevant periods. Using the same criteria for alcoholism that the chief medical officers had employed to guide them, and referring only to the original admission notes, the investigators found that a total of 238 cases of alcoholism had been missed. Their impression was now confirmed; next they attempted to discover why. What consistent differences were there between the group of 200 alcoholic men who had been assigned to the alcohol treatment project and the group of 238 alcoholic men who had not been assigned? How did the attitudes of physicians toward alcoholism influence their judgments?

The investigators focused on certain characteristics of the patients—all of which had been noted in the original admission record—and on two sets of attitudes believed to be held by physicians. One set encompasses the physician's predilection for a medical-surgical diagnosis as opposed to one indicating social or psychological disorder. The other set embraces the physician's tendency to regard alcoholism as a disorder occurring principally among the impoverished and socially deteriorated. They hypothesized that, first, the missed alcoholic patients would show a higher incidence of medical characteristics associated with physical disorders than assigned alcoholics would; and second, missed patients would possess fewer of the social characteristics associated with a skid row life than would assigned patients.

Both hypotheses were confirmed. First, compared to assigned patients, the missed cases were more often referred by a physician; they more frequently complained of a medical or surgical problem, more often received a medical diagnosis, and more frequently were hospitalized after emergency ward treatment. The investigators concluded that "the alcoholic who presents himself at the emergency ward in a manner consistent with the physician's preference for a diagnosis involving systemic disorder * * * will receive specific treatment for physical pathology but not necessarily for the alcoholic context in which the physical disorder occurs." Second, the missed alcoholics were found to be more socially integrated and more often possessed stable psychological attachments than did the assigned patients.

The researchers also constructed a combined social-medical index, consisting of 11 statistically significant social and medical variables. They found that the power of this combined index to discriminate between assigned and missed alcoholic patients was greater than that of either a social index or a medical index alone. From this they inferred that the medical and social characteristics a patient possesses tend to interact with one another in the physician's decisionmaking process. Still, it appeared that the physician's preference for a medical-surgical diagnosis took precedence over his view of alcoholics as derelicts. "From the physician's viewpoint," the investigators commented, "an alcoholic is an alcoholic only if he is relatively well physically and if he is a derelict."

The investigators' findings about the relationship between alcoholism and social isolation are relevant in this context. Although the differences between the groups of assigned and missed cases were indeed significant, the fact was the groups shared certain broad sociocultural characteristics. It was the researchers' impression that the men in both groups were more socially isolated than normal.

To test this impression they undertook a study in which the groups of missed and assigned alcoholics were each compared to a third control group of emergency ward patients. The control group was selected randomly and matched with the two alcoholic groups for age and time of admission (during subject-selection periods). Again, information about social integration and psychological attachments was obtained retrospectively from admission records. Three aspects were measured: social contact (especially with people psychologically important to the patient), social stability, and use of social resources such as medical insurance. When all patients were rated on these three measures, both assigned and missed alcoholics were found to be far more socially isolated than the men in the nonalcoholic control group. These findings suggested that some of the problems commonly associated with alcoholism may be, instead, problems of social isolation which, in turn, point to a need for clarifying the nature of alcoholism. Further, so long as the diagnosis of alcoholism relies heavily on the presence of severe social isolation, alcoholic individuals who are socially integrated only marginally will not usually be diagnosed as alcoholic and thus will not receive treatment for the disorder.

The investigators confirmed this important point again in their study of physicians' attitudes toward the diagnosis of alcoholism. The physicians who had served as chief medical officers in the emergency ward during the subject-selection periods were interviewed a year later. They answered a series of open-end questions about alcoholism, which were recorded on tape for later analysis.

The comments of these physicians made it clear that they thought the alcoholics coming to the emergency ward were almost exclusively drawn from the skid row population. As the investigators pointed out, this was literally a half-truth—the physicians had missed at least as many alcoholics as they had diagnosed. On the other hand, no physician came right out and said that alcoholism was a disorder of derelicts. On the contrary, they all agreed that alcoholism could and did occur in every social stratum, and the alcoholic-as-derelict was only one type of alcoholic patient. Their comments indicated, however, that they would be hesitant to diagnose alcoholism in patients who seemed to be socially intact.

The investigators suspected that the wide gap between the physicians' intellectual understanding of alcoholism and their actual diagnostic behavior resulted from certain subtle emotional perceptions and prejudgments. They also thought that social class identifications may have been in play; thus, a middle-class physician confronted by an alcoholic who is clearly middle class in background may simply not perceive the symptoms of the disorder and, if he does, may be uncomfortable about making a diagnosis of alcoholism.

The taped interviews also yielded information confirming the physicians' predilections for a medical-surgical diagnosis. The physicians were simply more interested in physical ailments and considered psychosocial problems to be secondary, if they considered them at all.

The work of other investigators reported over the past several years strongly indicates that the attitudes of the MGH physicians are not uncommon. One may safely conclude that most physicians harbor such complex and contradictory attitudes about alcoholism and its diagnosis. The situation is tragic in implication because physicians are least likely to refer socially intact alcoholic patients to specialized treatment resources. These patients have a more favorable prognosis than do the late-stage, socially deteriorated alcoholics. A followup study by the Boston group did, in fact, demonstrate that alcoholics who were more socially intact than the original sample of patients showed even higher proportions than did the original sample of those making initial visits (78 percent) and of those making five or more visits to the Alcohol Clinic (56 percent).

What has actually been happening, then, is that the most advanced cases of alcoholism—patients suffering what Dr. Chafetz has called "the metastasis of alcoholism"—are the alcoholics most likely to be referred to treatment. Yet these are precisely the cases that are most difficult and costly to treat and least likely to achieve significant recovery. Thus the myth that alcoholics are hopeless is sustained. It has been estimated that derelict alcoholics make up some 3 to 5 percent of the total population of alcoholics in the Nation. The tragedy is that unless physicians and the general public can be made to alter their perceptions and forego their prejudices, the 95 percent will struggle along without treatment unless they, too, end up in skid row.

Doctor Chafetz has proposed one way to begin halting this human waste—by getting rid altogether of the label "alcoholic." Whether one speaks of alcoholism, alcohol-related problems, or alcoholic excess, he pointed out, one is referring to a symptom of a highly complex disorder produced by myriad factors. "There is really no such thing as an alcoholic," Dr. Chafetz said. "Just as there is no headache-ic, no fever-ic, no pain-ic, there is no alcoholic. I am strongly proposing that to free ourselves from the bondage of subjective statements and dogmatic pronouncements, we must begin to examine the use and nonuse, the meaning and significance, and the implications of alcohol problems as they relate to the total individual and his society. * * *"

Doctor Chafetz has repeatedly emphasized the importance of broadening current efforts in the field of alcoholism to include secondary prevention—that is, early diagnosis—and primary prevention—steps to prevent the disorder from starting. "No effort in social and medical problems can hope to succeed if it is directed solely to treatment of the late stages of condition," he noted. "Treatment at best can only slow the flood waters, because the production of ill people far outruns the production of treaters." Under his direction, the Boston group has been active in these areas also; the researchers are now carrying out studies designed to explore various approaches to early case-finding.

An Ounce of Prevention

One line of approach involves utilizing people who are uniquely placed to discover prealcoholic conditions, for example, social and welfare caseworkers and public health nurses. Such people work directly with families; they go into homes to provide different sorts of help and are in a position of trust from which they can offer advice and guidance. Thus they possess a valuable potential for identifying individuals with alcohol problems and for helping them to seek expert treatment. Doctor Chafetz and his colleagues are focusing on public health nurses to determine how their potential in this area can be tapped.

Interviews were conducted among a sample of the Visiting Nurse Association of Boston by Drs. Howard T. Blane and Marjorie J. Hill, research psychologists of the MGH group. The investigators wanted to learn about the extent of the nurses' awareness of alcohol problems, their attitudes toward alcoholics, and what they thought they might do about identifying alcoholics and getting them to seek help.

The nurses' comments revealed that they, like physicians, tended to think of alcoholism in extreme terms. For instance, one nurse defined an alcoholic as someone "who doesn't eat * * * and will spend his last penny for a bottle of alcohol rather than have something to eat." With this sort of image in their minds, it was not surprising that the nurses reported they rarely encountered cases of alcoholism—despite the fact that Boston ranks fourth in the Nation in rate of alcoholism. On the other hand, the nurses said they were often aware of a drinking problem in a family. Usually they were not asked for advice about it. Under these circumstances some nurses felt free to broach the subject while others did not.

The nurses showed themselves to be accepting of alcoholics when the individual was sober but they were more ambivalent about an intoxicated problem-drinker. On the whole they appeared to be more accepting than physicians seemed to be. Although a number found their work with alcoholics challenging and rewarding, almost half thought that treatment attempts were futile. Moreover, their knowledge about treatment resources in the community was limited, which suggested to the investigators a lack of interest in the problem.

Finally, the nurses revealed that they were very uncertain of their role when confronted by an alcohol problem. They felt that their major contribution was to provide information and encourage the drinker's motivation to seek help. Yet, as the researchers commented, they often lacked both information and motivation. "If the nurse is to work comfortably as well as effectively," they noted, "she may need a chance to examine her own feelings and reactions to problem-drinkers." The investigators concluded from their work that additional training, provided while the nurses were in service to the community, could help open up this valuable source of early diagnosis.

Shortly after this study was concluded, the Boston VNA began a collaborative demonstration project with Doctor Chafetz and his colleagues at the MGH. Their project was a 3-year in-service training program for VNA nurses of eight central district offices. The content of the training program was broad in scope. Although the investigators were primarily interested in early identification of alcohol problems and prompt referral to the most appropriate community agency, they were aware of the necessity of helping the nurses learn how to recognize family problems generally and to know what constructive steps could realistically be taken.

Training consisted of a series of lectures and workshops given in the hospital, individual consultation with nurses who requested help with specific casework problems, and group meetings at district offices in which cases were presented and discussed. A number of attitudinal and other measures made before the training began have just been repeated now that the training has concluded. These will be systematically compared, before and after, to determine the effect of training. A group of nurses drawn from outlying VNA district offices are serving as controls. In another few months Doctor Hill will have completed the analyses of the before-and-after data and the investigators will report their findings.

A second approach to early casefinding involves the identification of populations at risk. Unfortunately, rather little is known about the natural history of the development of alcoholism and the efficacy of one or another intervention procedure. By studying groups thought to carry a high risk for alcoholism, researchers could begin to fill in some of this needed information. The Boston group has chosen to look at delinquent boys, aged 14 through 17, whose trouble with the law was associated with drinking. The investigators are now in the midst of this longitudinal study in which they are seeking to answer a number of basic questions. Is the association of delinquent behavior and drinking premonitory of the future development of alcoholism in these boys? Will therapeutic intervention at this age avert the onset of alcoholism? How do the personalities of drinking delinquents compare with those of nondrinking delinquents and with those of boys who do not get into trouble with the law?

Some 150 boys are participating in the first phase of the study. All have been adjudicated as delinquent and all have gotten in trouble while drinking. A third of the boys are getting expert help through individual and group psychotherapy and family counseling. Another third were taken through the intensive evaluation procedure, then assigned to the control "no treatment" group. The last third, also serving as controls, were simply identified from court records; they received no evaluation and are getting no treatment. The researchers are prepared to follow these boys at regular intervals as they grow into young adulthood.

Although it will be some time before this study yields results, Doctor Blane has reported one striking finding that came out of social history data taken from the first 30 boys seen. Almost two-thirds of these youngsters had, in effect, grown up without a father in the home. Some of the fathers were absent from the home permanently or for extended periods; others suffered severe physical or mental illnesses, including alcoholism.

The children of alcoholic parents are thought to carry above-average risks for alcoholism. There is also general agreement that these children are more likely than children of nonalcoholic families to suffer emotional disturbances and to develop behavior patterns that are socially deviant. Doctor Chafetz and his associates made a preliminary study of a group of such children who were being seen in the MGH Child Psychiatry Clinic and found evidence consistent with these views. The investigators will soon begin another study of children of alcoholic parents. They will attempt not only to document precisely the devastating effects an alcoholic family exerts on a growing child but to discover the personality traits that enable some children to escape unscathed.

A leadership training program just getting underway at the MGH is yet another avenue toward the goal of preventing alcohol problems. Under the direction of Doctor Chafetz, eight professionals (general practitioners, psychiatrists, social workers) and eight so-called preprofessionals (recent college graduates) will receive 1 year of training to prepare them to assume leadership roles in initiating and guiding alcoholism treatment and prevention programs. It is hoped that the trainees will settle in different parts of the country after graduation and thereby help to disseminate the extensive knowledge and experience achieved by the Boston group.

In this context it is worth noting that the methods originally developed midst the rich academic and institutional resources of urban Boston can be transplanted in quite different settings. This was demonstrated by the investigators a few years ago when they collaborated with mental health workers in a small New Hampshire town. A highly successful treatment program for alcoholics was established in the local general hospital; it has since expanded its services in a traveling clinic that serves the surrounding countryside.

Evaluating Treatment of Alcoholics

The treatment-catalyst team approach developed by the Boston group has been shown to be very effective in getting alcoholic patients into rehabilitation programs. What happens then? Just how efficacious are treatment methods generally in restoring victims of alcoholism to healthy useful lives? The answer is that no one knows; at least, there are no scientifically rigorous answers available.

Recently Doctors Hill and Blane reviewed the literature evaluating psychotherapy with alcoholic patients. They looked at a total of 49 papers published in the years 1952–63 and found that almost all were descriptive surveys rather than reports of research programs. Most authors did not attempt to devise a systematic methodology or to use statistical techniques for analyses. Only two of the 49 were prospective studies. Methods of control, of subject selection and the selection and definition of criterion variables, and of measuring change were found to be mainly inadequate and unreliable. Doctors Hill and Blane concluded that the summary offered 25 years earlier by the authors of the same sort of critical review was still accurate: "We are unable to form a conclusive opinion as to the value of psychotherapeutic methods in the treatment of alcoholism."

This situation is not unique to alcoholism treatment. There are no definitive answers about the efficacy of treatment for the whole range of psychoneurotic disturbances, character disorders, and social deviances. "Evaluation of psychotherapeutic treatment is the hardest research problem of all," Doctor Chafetz said. "The methodology is unsound and hard data are lacking. What we have got to do is set up an adequate model. We load the dice against ourselves when we use the acute infectious model. In that model you see symptoms, give specific medication, and the symptoms go away never to return. But with alcoholism we are dealing with a chronic illness. We can arrest and control but we cannot cure in the sense that we can cure an infection. People ask—'is he dry?'—and think that's all the answer they need. But that is not all. It is a clinical myth that recovered alcoholics cannot be social drinkers. We don't know; we simply do not have the facts. In our work we use a rating scale with multiple points including overall functioning, interpersonal relationships, and internalized feelings. We get base points on these measures when a patient first comes to us, then check again at various points in treatment. We may end an active phase of treatment but we know you can't discharge a chronic patient. They need to be able to come back, and they do."

Doctor Hill is just beginning a study that takes a very pragmatic approach to the problem of an adequate model of therapeutic success. In her view, one way to get at success is to define it in terms of what the patient wants from treatment and what the therapist wants. The researcher is interviewing patients at the beginning of treatment and finding out what goals he has. So far, most have responded immediately that they want "to quit drinking"; but Doctor Hill urges them to name other goals they may wish to reach. Then, after a therapist has seen an individual patient three or four times, Doctor Hill asks him about his goals for the patient during the coming 3 months. Patients and therapists will be interviewed again at the end of 6 months, when a therapist will be asked to *predict* what goals his patient named. It will be interesting to know how congruent patient and therapist goals are; "success" may have disparate meanings to the patient and the therapist.

The design of this study will also make it possible to learn something about behavioral correlates of moderation and abstinence. In other words, how else does the patient's behavior change as his drinking habits change? There is no lack of opinion on this question, but there are almost no factual answers. Abstinence has traditionally been the major, often the exclusive, goal of treatment efforts. Yet when consumption drops to zero or is significantly moderated, the patient may develop ulcers or suffer anxiety attacks or lose every friend he has. Abstinence as a goal may be unrealistic on other counts as well. This is the heart of the issue that Doctor Chafetz raises when he stresses the importance of seeing, and treating, the total individual in his total social system.

While the many problems of treatment evaluation represent an important challenge to researchers in alcoholism, their most urgent responsibility is to the millions of people who need help with their drinking today. There are many types of treatment now in use that effect some measure of amelioration. Doctor Chafetz has no doubts that, on the basis of clinical impression, the methods used at the MGH are effective. "I believe that if the same criteria are applied to alcoholism as to other chronic conditions dealt with in medicine, the success rate of treatment is roughly equivalent to that for most other chronic conditions."

Miss Eleanor Clark, director of social services at the hospital and a close collaborator in these programs from their inception, has offered an illustration of the kind of success that can be hoped for with late-stage alcoholics if treatment is imaginatively tailored to patient needs. The example concerns a group of homeless, unemployed men with long histories of chronic alcoholism. The treatment-catalyst teams succeeded in preserving that spark of motivation that brought each man to the emergency ward, but the emotional damage each had sustained was very severe indeed. None could tolerate the therapist's attempts to establish a relationship of mutual trust and respect. "We recognized that their needs for human contact and ego-building experiences could not be met by the usual community contacts," Miss Clark noted, "and decided to structure a specially geared substitute family and small community around them." The result was a therapy group that became known as "the supper club." Once a week a psychiatrist and a social worker met with the patients for dinner in the hospital cafeteria. It was the patient who had decided the substance of these group encounters—part socializing and part discussion of problems. Three years after the group meetings began, all 10 of the regular members had found jobs and had a place of their own to live in. Some had been reunited with their families. For people who had started with nothing but a scrap of hope, the treatment was truly a success.

Adding Relevance to Emergency Services

No account of the clinical studies in alcoholism made by the Boston group would be complete without noting that the approach developed with such success for alcoholic patients has also proved to be effective with general psychiatric patients entering the hospital via the emergency ward. A few years after the program for alcoholics had demonstrated its effectiveness, the researchers were asked to try to work out a similar approach for the psychiatric population entering the emergency ward. In response, the investigators set up the Acute Psychiatric Service. This service utilized the same techniques of approach to EW psychiatric patients as had been employed with EW alcoholic patients: Concerted efforts to enhance motivation for treatment in the initial contact; team evaluation of the patient and his primary social system; comprehensive planning that included the patient and his family; and continuous coordination of care with relevant community agencies.

The new approach yielded immediate results. Before the Acute Psychiatric Service was established, 7.1 percent of the patients seen in the emergency ward had followed through on a referral to the Psychiatric Clinic. During the first year of the Acute Psychiatric Service, 40 percent followed through with a visit to the Psychiatric Clinic. Although the precise techniques necessarily differed from one case to another, the caretakers all shared an attitude of concern for their patients' well-being and a respect for their dignity as individuals. "Fortunately or unfortunately," Doctor Chafetz has commented, "such is not an explicit problem when dealing with middle- and upper-class psychiatric patients."

The emergency ward patient population is principally drawn, as it has been historically, from lower- and lower-middle-class urban groups. There is evidence suggesting that these groups have always used the emergency ward as other socioeconomic groups used a family doctor. The investigators have estimated that less than 5 percent of the patients seen in the EW fit into the classification of life-or-death medical-surgical emergencies. They have calculated that fully three-quarters of these patients present problems that are primarily psychosocial in origin. Emergency ward admissions have burgeoned in the last two decades, not only at the MGH but in most large general hospitals in the Nation and, indeed, in other industrial countries in the world. The researchers examined several possibilities that might explain this phenomenon and concluded that it stems primarily from the growing inaccessibility of private physicians to lower-class urban citizens.

Psychiatric patients from the lower socioeconomic strata have generally been considered "poor therapeutic risks" because so small a proportion of them have been found to follow through with psychotherapeutic treatment. Dr. Chafetz feels strongly that such patients are not getting treatment because of "communication difficulties" between them and their middle-class therapists. "Lower-class individuals are generally action oriented," he noted, "and this runs counter to the thinking-verbal orientation usually found among middle-class therapists. And one wonders if many of the reported failures of psychiatric treatment for large populations result from the inability of these patients to be treated or are the result of limited therapeutic approaches not applicable to much of the population of psychiatric and social casualties."

The investigator does not feel that psychiatric practice must undergo radical change in order to reach and treat this large population suffering from one or another form of psychosocial stress. He has noted that what may be required are simply shifts in emphasis of dynamic therapy: "From the individual *in vacuo* to the individual as a member of a dynamic social system; from an agency as the sole treatment resource to a community of agencies; from an effort to fit all patients into a middle-class value system to an effort to understand and function within the value system of each patient's subcultural group."

A recent administrative reorganization of the outpatient psychiatric services at the MGH has changed the name and some of the functions of the Acute Psychiatric Service. It is now called the Psychiatric Evaluation Center and it is a 24-hour walk-in service. The Alcohol Clinic exists no more in name, although the services it provided are still an important component of outpatient care. These two services, together with the Adult Psychiatry Clinic, are now under Doctor Chafetz's overall direction. The new approach to alcoholic and lower-class psychiatric patients seen in the emergency ward is not really new any longer; it is, instead, an established routine for all patients with psychosocial—including alcoholic—problems who come to the MGH emergency ward for help. Thanks to the work of these researchers, these patients are indeed receiving help.

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BEHAVIORAL CONSEQUENCES OF ALIENATION

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Although it is probably true that there never has been a human community without its critics, the case against modern industrial society may be unique in history for the intellectual sophistication and emotional appeal of its arguments. Distinguished scholars such as Arendt, Marcuse, Fromm, and Mills have formulated the radical critique for our own time. The critique has an illustrious history, moreover, with main roots in the 19th-century writings of Durkheim, Weber, and Marx. The works in this genre now form a more or less cohesive body of literature known as mass society theory. The mass society has been criticized in many particulars, but the common judgment spanning the decades is that a mass society is, on the whole, an unhealthy one. Indeed, mass society analysts have been aptly called the pathologists of contemporary industrial societies.

Alienation is the dominant theme in mass society analysis. Alienation is regarded as the psychological effect generated by the structural forms that define a mass society and, in turn, it is considered to be the primary cause of a multitude of personal ills and social evils. The pivotal role assigned to the alienation concept can be made clear by outlining the central thesis of the mass society literature. The thesis is essentially composed of three elements—a historically oriented view of contemporary social forms, the concept of alienation, and judgments about the quality of contemporary life.

A mass society is defined by its structural features, which are the forms inherent in the historical developments of democratization, urbanization, and industrialization. It is a society in which most major institutions are designed to deal with people in the aggregate without distinguishing among individuals or small groups of individuals. "Mass" refers not to large size or huge numbers per se, but to the enlargement of the scale of social forms. Thus national governments, nationwide corporations, transportation and communication systems regularly make decisions that affect whole populations. Mass culture, mass production, mass consumption supplant the natural heterogeneity of the people. Pressures for technical efficiency and rational control lead to the bureaucratization of organizations: community is lost. Geographical mobility displaces stability. Kinship ties are attenuated: anonymity and impersonality come to characterize relations among people.

Mass society theorists have argued that alienation is fostered among the members of a society with these structural features. The alienated man suffers incalculable losses of many personal satisfactions as an individual human being. He is, as a consequence, especially vulnerable to mental and emotional disturbances. Further, a society in which there are large numbers of alienated men has little cohesiveness and organic integrity. A mass society may be beset, for example, by such social evils as widespread political passivity, ethnic and racial prejudices, and wildcat strikes of industrial workers.

This capsule statement of the mass society theory does not do justice to the persuasiveness of the formulations, but it does suggest the seriousness of the charges made. There is no doubt that these ideas and assertions, particularly the concept of alienation, have persisted because they are intellectually and emotionally seductive to many thoughtful people. Yet the literature of mass society theory tends to be discursive and rhetorical, and the use of the crucial alienation concept rather more exhortatory than analytical. As a result Prof. Melvin Seeman has noted, "the debate concerning alienation has often remained sterile, however valid the critique of society and however proper and humane the values involved." Professor Seeman has been trying to clarify the terms of that debate and to derive some specific propositions about alienation that would lend themselves to systematic testing.

The task began in 1959 with the publication of a conceptual paper in which Professor Seeman suggested that the various connotations of alienation could be distilled into five related but separate ideas.[1] In defining these ideas, he drew upon the social learning theory of Julian B. Rotter, a theory that Professor Seeman thinks has much in common with the alienative notion of powerlessness and its consequences. These five varieties of alienation, then, were defined in terms of an individual's expectations and his values.

- Powerlessness. The person who experiences a sense of powerlessness expects that forces outside himself control his personal and social rewards. He has little expectancy that his own behavior can be efficacious in gaining these rewards.

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[1] Since that time, Professor Seeman has added a sixth form of alienation, social isolation, which he defines as an individual's low expectancy for social acceptance, as reflected, for example, in the feelings of loneliness and exclusion experienced by members of minority groups.

- **Meaninglessness.** The individual regards social affairs as incomprehensible. Therefore, he has little expectancy that he can predict the outcome of social events.
- **Normlessness.** The individual believes that he is not bound by conventional standards of conduct in the pursuit of his goals. Normlessness, on the contrary, implies a high expectancy that socially unapproved means must be used to achieve these goals.
- **Value isolation.** The individual rejects the values of society. He assigns low value to the goals and behaviors that are highly valued by most other members of his society.
- Self-estrangement. While this idea has taken a number of definitional forms, the one in which it is perhaps most easily grasped is this: To be self-estranged is to be engaged in activities that are not rewarding in themselves. This is self-estrangement in the classic Marxian sense of alienated labor. In social learning terms, the self-estranged person is continuously engaged in activities he does not value highly.

Professor Seeman has noted that the obverse of these alienative forms—order and trust, consensus and commitment, integrity and engagement—represent humanistic values that are highly esteemed by democratic societies. Thus, to the extent alienation is engendered in a society such as ours in the United States, it exerts profoundly detrimental effects on individual lives and threatens to make a mockery of our most cherished values. The crucial questions, of course, are whether or not the social forms of our modern industrial society really do spawn alienation among individual Americans and, if so, whether or not alienation has the behavioral consequences that mass society theory would predict.

It is the second question that has chiefly interested Professor Seeman. In a series of empirical studies carried out over the last 10 years, he has looked at two forms of alienation, powerlessness and self-estrangement, and has sought to discover whether an individual's level of alienation is related to his behavior in certain circumscribed areas.

Powerlessness and Learning

As noted above, Professor Seeman utilized certain constructs from a theory of social learning in his explication of alienation. The similarities between this theory and the mass society view of the behavioral consequences of an individual's powerlessness are quite striking.

The social learning theory formulated by J. B. Rotter holds that a person's behavior is significantly influenced by two factors and by the situation in which they occur or are embedded. It depends on his expectancy that the behavior will lead to a successful outcome and on the value he places on that outcome. Moreover, the theory distinguishes between internal and external control of rewards. Dr. Rotter and his associates have postulated that, in laboratory experiments in learning, subjects will not do as well when they perceive their success as being dependent on chance or luck or on the experimenter's control of the situation as when they believe that their own skill can decide the outcome. (A number of investigations have since shown that this is indeed true.) Similarly, mass society analysts have contended that the individual living in a contemporary industrial society, believing that he is powerless to determine the successful outcome of his social behaviors, turns away from political activities; his sense of powerlessness makes him indifferent to and a poor learner of political information and of other knowledge relevant to his social functioning.

"Thus," Professor Seeman has commented, "the idea of powerlessness extends downward, as it were, in its potential for reorganizing the relatively 'microscopic' studies of laboratory learning . . . But the idea of powerlessness also extends upward in its significance, being an integral element in sociological descriptions of 'macroscopic' concerns: The occurrence of mass movements, the conditions of political democracy, and the like."

The first of a series of controlled studies testing the relation between powerlessness and learning was conducted by Professor Seeman and a colleague, John W. Evans, among the patients in 10 tuberculosis sanitariums in Ohio. Their hypothesis was that a patient's sense of powerlessness influenced what he had learned about tuberculosis. They predicted that high powerlessness would be associated with poor learning.

A total of 86 white male subjects were selected from a much larger sample and grouped into 43 pairs closely matched for age, income, education, length of hospitalization, estimated discharge time and, most important, hospital experience—each individual in a pair lived on the same ward of a hospital and was exposed to the same routines and staff care. They differed, of course, in their positions on the powerlessness scale.

The scale consisted of forced-choice items designed to reveal an individual's expectancies for personal control.[2] Most items referred to sociopolitical expectancies. For example, the patients were asked to choose, on the basis of personal belief, between these two statements: "The average citizen can have an influence on the way the government is run," and "This world is run by the few people in power and there is not much the little guy can do about it." The scores of the total sample were divided at the mean of the distribution into "low" and "high" alienation. Each pair of matched patients, then, included an "unalienated" and an "alienated" person.

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[2] The alienation measure used in this and the other studies reported here was adapted from the I–E Scale (internal-external control) developed by Professor J. B. Rotter and the late Professor Shephard Liverant at the Ohio State University. The I–E Scale has been extensively tested and refined and shows satisfactory reliability.

The investigators also needed a measure of each patient's knowledge about tuberculosis. This they obtained by a standard true-false information test based on one used by the National Tuberculosis Association. Then, to get an idea of the extent to which a patient's objective knowledge was manifested in his ward behavior, the staff was asked a number of questions about the behavior of individual patients. Two questions were pertinent: How good is this patient's understanding of his illness, and of the disease generally? This gave the investigators a measure of what they called reputed knowledge. Finally, they obtained from each patient a measure of his subjective knowledge; that is, an indication of how satisfied he felt with the knowledge about tuberculosis that he possessed. These latter two measures were taken solely to help shed light on the researcher's central inquiry, which concerned the postulated relationship between an individual's expectancies for control and his objective knowledge about an event—tuberculosis—that strongly affected his life career.

The results confirmed the prediction: alienated patients scored lower on the information test than did unalienated patients. The difference between the two groups was small but statistically significant. The investigators showed that the difference in knowledge about tuberculosis did not reflect any consistent differences in intelligence among individuals in the two groups.

Staff evaluation of a subject's knowledge, so-called reputed knowledge, was in line with the main finding. Patients high in alienation were judged by the staff to be less well informed about tuberculosis than patients relatively lower in alienation. No significant correlation was found between subjective knowledge and alienation, but an interesting interaction was discovered between ward stratification and alienation. The relatively more controlled environments (controlled by the physician in charge) drew fewer responses indicating dissatisfaction from the unalienated than from the alienated patients. The researchers had predicted that the opposite would be the case—that those who felt a greater mastery would resent the tight control exerted in the highly stratified ward. They offered one possible interpretation of this finding. A highly stratified environment is not congenial to the transmission of knowledge and it could be, they suggested, that on such wards the alienated patients actively sought and gained more knowledge than alienated patients were inclined to do. In a less controlled ward setting, knowledge may be acquired more passively, and thus be equally available to those willing to seek it (the unalienated) and those for whom knowledge presumably has little value and, therefore, is not worth any effort to attain (the alienated). This interpretation was modestly substantiated when the investigators compared objective knowledge scores of the unalienated and alienated groups on the two different kinds of wards. There was less difference between the group scores if patients resided on a low-stratification ward than if they lived on a highly stratified ward.

The results of this study, then, provided a reasonably satisfactory demonstration of an association between powerlessness and learning. At least two questions were left open, however. Was the relatively poor learning shown by the more alienated patients the product of their greater sense of powerlessness or did their powerlessness come from possessing little knowledge? Second, information from only one domain of information was tested—the control-relevant domain of tuberculosis information; would the more alienated patients have made an equally poor showing in any other area of knowledge, which might suggest a general withdrawal of their interest in learning? The design of Professor Seeman's next study provided ways to look into these questions.

The next study was carried out among the young male inmates of an Ohio reformatory. The choice of setting was particularly apt. "It is possible to conceive of the reformatory and its associated training apparatus as a vast learning mechanism," Professor Seeman pointed out, "but one in which the essential features of powerlessness dominate institutional life—where, for example, paroles are denied and inmates left in ignorance of the reasons, and where the inmate culture is a response to the more or less total threat to personal control."

The alienation scale used in this study was like the one used with the tuberculosis patients. Once again the scores were divided at the mean of distribution so that the subjects could be described as high or low in alienation. The tests of learning were quite different. This time Professor Seeman tested for new learning rather than measure prior knowledge. To do so, the group of 85 men (none having less than an IQ of 100 or a ninth-grade education) was presented with 24 items of information about correction. A third of these items dealt with the reformatory, a third were concerned with parole matters, and a third dealt with long-range opportunities. The items were compiled from documents not readily available to the men and presumably represented new information.

The men were presented with this material twice in one session. In order to insure that each item would be read, the investigator first asked them to mark off how interested they were in each item; moments after this task was completed, the men were given the items arranged in a multiple-choice-test format which they were asked to complete. The latter constituted their learning scores, for it tested how much of the material they had retained.

The investigator found that men low in alienation achieved significantly better recall of the parole items than did men high in alienation. There was no statistically significant difference between the alienation groups in the recall of the two other kinds of information.

Professor Seeman also made an estimate of the value each man placed on the conventional norms of the reformatory by compiling the number of merit commendations each had earned from prison authorities. Differences in powerlessness were found to be unrelated to learning among inmates who had earned no merits, but high or low powerlessness made a significant difference in learning among men who had earned one or more merits. The highest correlation between alienation and the learning of parole items appeared when low powerlessness was accompanied by a degree of commitment to the values of rehabilitation (as symbolized by the earning of merits). Thus, as Rotter's social learning theory would suggest, the combination of high expectation for personal control and high evaluation of the goals in question was most revealing of the association between alienation and learning.

Merit commendations were an indication of the men's behavior in the reformatory; Professor Seeman also obtained some indication of their behavior outside the reformatory, prior to confinement. Although age and IQ were found to be unrelated to learning scores, continuation beyond the ninth grade and achievement relative to capacity were relevant. A man's willingness to stay in school and to achieve in accordance with his capacity correlated well with both low powerlessness and good learning of parole material. "The most interesting feature of these results," Professor Seeman commented, "lies in the fact that the inmate's learning of corrections-relevant material (the parole information) is related not only to his generalized expectancies for control but to his behavior—both outside the prison and inside it—which presumably reflects such expectancies."

This investigation went a long way towards clarifying the relations between behavior and alienation in the powerlessness sense of low expectancy for control. It yielded a clear demonstration of an association between learning and alienation. More, the findings suggested some limits of this association—it appears only in the learning of control-relevant information—and revealed the fact that some behavioral concomitants of alienation may be found outside the sphere of learning. These two important additions to the body of evidence about alienation were explored in depth in the third study of this series. The study was made in Sweden; Professor Seeman carried out a number of related investigations in Sweden, which gave him an opportunity to examine the cross-cultural validity of alienation effects on learning and other behaviors. The study to be described next was conducted among some 300 students at Lund University; the other studies will be discussed below in different contexts.

The basic design was similar to that of the other investigations. Students were judged to be high or low in alienation on the basis of their scores on the powerlessness scale, and each student's knowledge in one or the other of two domains of information was tested. One was the domain of cultural knowledge and the other was that of nuclear weapons (for a small subsample, political information was also tested). All tests were equal in difficulty. Professor Seeman predicted that high alienation would be associated with poor scores on the nuclear (or political) test, but alienation would be irrelevant to scores on the cultural test. In other words, he hypothesized that alienation would affect learning differentially, as was suggested by the results of the reformatory study, and that the acquisition of control-relevant information is the specific learning most affected by one's relative sense of mastery or powerlessness.

Another alienation proposition was tested in this work. Prior to the initiation of the study, each student had completed a short version of the alienation scale, and these scores were in hand when the study proper got under way. For the study proper, then, most students received a cultural or a nuclear test and a long version of the alienation scale by mail, along with a covering letter and return envelope. Professor Seeman was interested in those who delayed returning the tests or failed to do so altogether, that is, those who showed avoidance behavior. He predicted that high alienation would be associated with late or nonreturns among the group that got the nuclear test but that no such association would appear among those getting the cultural test. This, he suggested, would allow for a "micro-demonstration" of the proposition that powerlessness leads to avoidance behavior—"micro-" because what was involved was "the small world of everyday tasks, like responding to an inquiry from the university."

The results concerning alienation and control-relevant learning confirmed the prediction: High alienation, especially for women, correlated with poor knowledge of nuclear weapons or political affairs, but alienation, high or low, showed no associations with cultural knowledge, poor or good.

The data did not reveal so clearcut an answer to the question about avoidance behavior and alienation. The results tended to confirm the prediction—that is, alienated students were slower to return and more often failed to return the packet of tests if they had gotten a nuclear test than if they had received a cultural test—but did not reach statistical significance. There was, in fact, an astonishingly high rate of return (85 percent) before followup letters were sent out, which might be attributable to the fact that in Sweden there are strong, though informal, pressures to cooperate in social research.

This study showed that the proposition concerning the effects of powerlessness on differential learning holds in the domain of sociopolitical information and that it is valid for college-age students of another culture. Taken together, the three studies of alienation and powerlessness convincingly demonstrated the applicability of this proposition to a range of information domains and to different populations of people. In so doing, Professor Seeman's work greatly strengthened the empirical basis of the proposition's credibility and its usefulness in other social research. For example, its applicability to a sensitive and vital area of American life, the education of young children, was recently demonstrated by James S. Coleman and coauthors in their report, *Equality of Educational Opportunity.*[3] Professor Seeman has cited the relevant passage: "* * * a pupil factor which appears to have a stronger relationship to achievement than do all the 'school' factors taken together is the extent to which an individual feels that he has some control over his destiny." To the degree the proposition linking high alienation and poor learning is valid in other areas as well, it bears important implications for those trying to increase public understanding of international political issues, say, or those responsible for public health information campaigns about alcoholism, for instance, or the value of prenatal care.

The Role of Organizational Ties

Mass society theorists have made an important recommendation in their writings. They have repeatedly asserted that organizational ties must be established by the individual in order for him to have an effective mediator vis-a-vis the mass-scale institutions that surround him. This theme is sounded throughout the mass society literature, from Durkheim to Mills; although Mills, in *The Power Elite*, expressed doubts about the efficacy of mediating organizations in our time because they, too, as he saw them, had begun to assume mass-scale qualities.

Perhaps the most familiar example of a mediating organization is a labor union, and mass society theory would predict that union membership mitigates a worker's sense of alienation. To test this, Professor Seeman and a colleague, Arthur G. Neal, formulated a concrete hypothesis that could be examined in an empirical manner. The hypothesis: "We expected members of a work-based formal organization to exhibit less powerlessness than individuals without an organization to speak for them in the crucial area of occupation."

The setting for the study designed to examine this hypothesis was Columbus, Ohio, where the investigators assembled a random sample of adult male subjects from the city directory. Mail questionnaires were used to gather necessary information about each man's union membership and his sense of powerlessness. In addition, each was asked to answer questions about his experience of occupational mobility and to complete a scale designed to determine his attitudes towards mobility. These latter measures were needed, the researchers noted, because several studies had shown mobility and mastery (the obverse of powerlessness) to be related. Finally, subjects also received the well-known anomie scale, developed by Leo Srole, which can be interpreted as measuring generalized despair. This was included because the investigators wanted to find out if nonmembership was associated with other forms of alienation in addition to powerlessness.

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[3] U.S. Government Printing Office. Washington, D.C. 1966.

Through the use of personal interviews done after the returns were in, the investigators checked the possibility that more alienated than unalienated men would have delayed or not bothered at all to comply with the mailed requests. They found this was not the case: Neither late return nor nonreturn correlated with high alienation. The investigators received replies from slightly more than 600 men (57 percent of the original sample). The occupational statuses of the respondents ranged from high-level executives to unemployed manual workers. Analyses of the data yielded the following results.

First, the basic prediction was confirmed. Compared to the group of organized workers, the group of unorganized workers felt themselves to be more powerless. This finding held when the variables of occupational status and income were controlled. When the mobility variables were taken into account, on the other hand, the investigators did find some interesting interactions.

When the groups of organized and unorganized men were separated into manual and nonmanual workers, the investigators found the same strong association between high powerlessness and nonmembership among the manual workers, regardless of mobility history or attitude. The picture was different among non-manual workers. For this group, a mobility attitude of nonstriving reversed the effect. Thus, among the mobility-oriented white-collar workers, the unorganized were higher in powerlessness than the organized (as expected), but it was the organized workers who were higher in powerlessness than the unorganized in the group of nonstriving white-collar workers. These data enabled the researchers to add a useful refinement to the thesis about organizational ties: It is particularly applicable to workers committed to mobility.

Second, no consistent relation emerged between membership or nonmembership and anomie, although unorganized workers tended to be only slightly higher in anomie than organized workers. By implication, anomie and powerlessness were not found to be strongly and systematically related either. This negative evidence was welcome on two counts. First, it supported the investigators' assumptions that their hypothesis was a relatively specific one—i.e., membership or nonmembership was linked to the powerlessness form of alienation—and second, it was suggested that powerlessness, as they defined and measured it, was a satisfactorily specific form of alienation that excluded more generalized feelings of hopelessness.

Although low powerlessness was clearly shown to be associated with organizational membership, the fact by itself does not support the mass society thesis regarding mediating organizations. One may wonder, as the investigators did, whether membership leads to low alienation or vice versa. The researchers were able to make a start toward the answer by obtaining data on the union situation (open or closed shop, maintenance-of-membership contracts, and the like) in the firms where their respondents worked. While conceding that their findings had to be regarded as only tentative, they concluded that both options were valid. In other words, the mass society argument about membership ameliorating the alienative effects of social structures was not inconsistent with the evidence; alternately, the data also provided support for the interpretation that workers low in alienation may be motivated, by virtue of their expectancy for personal control, to join organizations which are vehicles for the exercise of control in the work sphere.

The proposition concerning the ameliorative effects of organizational ties was directly tested in one other population. This was a large random sample, some 550 men, of the work force of Malmö, Sweden. Professor Seeman worked intensively with this group; in addition to the data required for the mediation thesis, he gathered many other kinds of information pertaining to alienation and its putative effects on behavior and attitudes. Much of what he discovered will be described below in the section on alienated labor. Two aspects of this omnibus Swedish work are relevant at this point of the report, the evidence concerning the mediation thesis and the data demonstrating anew, in the context of the mediation thesis, the relation between powerlessness and learning.

In Malmö, as in Columbus, high powerlessness and poor knowledge of political affairs were found to be associated in the group of unorganized workers, manual and nonmanual; there was no such association to be seen among the organized workers. The same pattern held when such pertinent variables as education, income, and occupational prestige were controlled. Moreover, there was a modest connection between degree of involvement and both powerlessness and learning: Workers who were little involved in their organizations scored higher in powerlessness and lower in political knowledge than did those who were more involved.

Thus, in two disparate cultural settings, men who were members of a work organization experienced less personal powerlessness in the sociopolitical arena than did their unorganized fellow workers. The evidence gathered in the two studies was consistent with the mass society thesis assigning a meliorative role to such organizations. More investigations are needed, however, to determine how much a worker's sense of powerlessness is minimized by his membership in a work organization as opposed to how much his sense of his ability to influence conditions that affect him leads him to join the organization in the first place.

Alienation in Work

The world of work occupies a prominent place in mass society theory, which devotes much attention to alienated labor. An alienated worker is defined as one who does work that is not intrinsically rewarding to him. He does it because he feels he must, not because he gains personal satisfaction in the activity. To engage in such work regularly, then, is to experience a variety of self-estrangement. Mass society and Marxian theorists have contended that the existence of an alienated labor force is itself responsible for a plethora of social problems. The deleterious effects are seen to be so pervasive and profound, in fact, that Marx and others have argued that many of the social ills of modern industrial societies could be made to disappear if only the alienation of labor were ended.

As expressed in the mass society literature, the consequences of alienated labor include attitudinal effects such as powerlessness and normlessness as well as behavioral effects such as minimal political participation, racial and ethnic hostility, and the substitution of extrinsic goals (job status, for example) for unattainable intrinsic satisfactions. Professor Seeman has characterized this theme of the mass society literature as the generalization thesis. He has begun to test its validity in separate investigations carried out in Sweden, France, and the United States. The Swedish study has been completed and it can be reported in full.

A random sample of the male work force of Malmö constituted the study population. Data were obtained through personal interviews with the workers. The basic measure—whether or not a worker felt alienated from his work—was obtained by reference to a work alienation index, which was developed by factor analysis of the responses to pertinent questions. The scale finally developed by this method was composed of seven items, for example, "Is your job too simple to bring out your best abilities, or not?" The investigator also obtained measures of powerlessness, ethnic and radical prejudice, anomie, political knowledge, orientation to experts, and mobility orientation. According to the mass society generalization thesis, a man who is alienated from his work feels powerless, hostile to "others," and anomic; he is rather ignorant of political affairs, tending to leave them in the hands of experts, and strives for the extrinsic rewards that status confers.

Reasonable though this thesis may sound, the analyses of the data yielded very little support for it. Work alienation was *not* found to be related to any of the theoretical outcomes in a statistically significant manner, although some of the outcomes did relate to one another—for example, high powerlessness was associated with scanty political knowledge and high expert orientation and with racial hostility. Even when variables such as age, income, occupation, and the like were controlled, no clear-cut associations with work alienation emerged. Further, when considering solely the question of how much control a worker felt he exerted in his work process—supposedly the quintessential condition of alienated labor—the associations to the postulated effects were similarly minimal. The conclusion to be drawn from these results, then, was that the attitudinal and behavioral consequences repeatedly attributed to alienation in work simply do not reflect the reality as it exists in Sweden.

An obvious question that arises is whether Sweden, after all, should not be considered an exceptional case because of its homogeneous population, its long history of peace and of social and economic stability. To answer this question, Professor Seeman undertook to perform essentially similar studies of alienation in work in France and the United States. These, too, are highly industrialized societies, but their political and social histories differ markedly from Sweden's and are different from one another as well.

Results from these two studies are not yet available. Preliminary analyses suggest, however, that neither the French nor the American situation differs from the Swedish in terms of the consequences of alienated labor. On the other hand, it appears that the relation between high powerlessness and low political knowledge will be found in both the French and American populations, as will additional validation of the mediation thesis. (The study in Los Angeles should also help illuminate the uniquely American racial situation. In addition to interviewing some 500 adult male white subjects, the investigator assembled a subsample of some 270 Negro workers. It should be instructive to see how the data collected from the white workers compare to those gathered in the Negro subgroup.) When the results from all three countries are available, the generalization thesis of mass society theory will have received a substantial test.

Even if alienated labor does not produce the adverse personal and social outcomes that have been imputed to it, it remains a source of concern. "For one thing," Professor Seeman has noted, "work life absorbs a major portion of the day, and an ethical stance concerning it must come to terms with that fact, regardless of any other consequences of alienated labor. For another, it is reasonable to argue either that the outcomes we have treated constitute an insufficient list (the data say little about the quality of family life, for example) or that the consequences will reveal themselves in a longer-term, cumulative way—for example, in revolutions or in the irregular outbursts of a wildcat strike."

Nor can it be assumed that men alienated from their daily work are indifferent to the fact. The sort of data required to examine the generalization thesis did not touch on such matters. It cannot be said, therefore, whether or not the worker detests his work and is angry at himself for doing it. All that the data do allow us to say, Professor Seeman has pointed out, is that "people can work out fairly effective adjustments to varied kinds of work, *if* by 'effective' we simply mean leading a work life that has little generalized effect on the standard forms of hating, striving, withdrawing, and complaining reviewed here." Thus, although the predictions implicit in the mass society generalization thesis may ultimately prove to be invalid, the ideological indictment of industrial forms that breed alienation in work is a separate issue and one still most worthy of attention.

The concept of alienation bears on some of the most urgent problems confronting our society. Yet the resounding rhetoric in which discussions of alienation are often couched makes it too easy for many people to dismiss the ideas along with the words as baseless pessimism. Professor Seeman's concern as a scientist has been to help turn "the parable of alienation into a proposition," or rather a series of propositions that can be accepted, rejected, or amended on the basis of deductions drawn from evidence methodically gathered in controlled but real situations. As a result of his work, we begin to see that the "pessimism" of the mass society radical critique is not, in fact, groundless.

Much more research on problems involving alienation needs to be carried out before we know just how valid the critique is and, more constructively, how much insight into man's social behaviors can be gained through explorations of the alienation concept. Professor Seeman recently outlined a general program of research to be done in this area and enumerated several studies he thought would be useful. In that paper, which will be a chapter in a book to be published by the Russell Sage Foundation, the investigator also described the unique challenges that such research makes on social scientists.

"The fact remains," Professor Seeman concluded, "that there *were* concentration camps and genocide, that there *are* now widely disrespected qualities in American life—including a widely disrespected war, at the moment—and that there *will* be further urban violence born of frustrated hopes. That kind of past, present, and future create a special tension for the sociologist interested in the problem of alienation. It is the tension between keeping a craft that is worthy of the name, and at the same time making sociological investigation practically and morally relevant. The danger on the craft side is that the work deteriorates into a kind of alienation in itself—bound by technical rules, limitied in vision, devoid of personal involvement, and largely oriented to careers. The danger on the side of relevance is that this deteriorates, too—into a subtle anti-intellectualism that is impatient with any thing but the immediate; or into a kind of self-indulgence that emphasizes stance over analysis, so that what becomes crucial is one's identification (as radical, as realist, as humanist, or whatever). My hope is that the secularization of work on alienation can continue to be achieved while avoiding both these dangers—which is to say that clarity and demonstration can be successfully wedded to scope and human concern."

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The events of July 1967 in Detroit shocked almost everyone in that city. The professional staff at Lafayette Clinic attempted to make an immediate study of the crisis. Lafayette, a State-financed psychiatric clinic, is located in the center of the city and has always had a strong research focus. Even while the riot was still going on, research outlines were designed and questionnaires were printed. Interviewers were recruited immediately to begin to talk to the people involved in the riot. The riot was a terrible one by any standard. It is estimated that 44 people were killed and many thousands injured. Many firemen, policemen, and National Guard personnel were injured as well. An estimated $40 million worth of damage was done to various sections of the city. Seventy-two hundred men, women, and children were arrested and detained in jails, State and Federal prisons, bathhouses, garages, and buses.

Research began with the interviewing of people who were forced to leave their homes due to danger or damage or lack of food in their neighborhoods. They were seen in the emergency food distribution centers which were set up in the riot areas. These people are here referred to as the "dislocated." Later, a random sample of those arrested were interviewed, and their treatment by the police was investigated. The police were interviewed as part of the study as well. After the crisis period was over, a comparative study was done of those who lived in the riot area and the rest of the community.

The investigators point out that the Detroit riot followed the pattern described by Dr. John Spiegel, who is the Director of the Violence Study Center at Brandeis University. Doctor Spiegel describes the riot as a type of communication. According to Doctor Spiegel, there are four social conditions which usually precede urban riots. The first is a severe conflict of values or a failure to apply egalitarian values to all ethnic groups. The second is the existence of a "hostile belief system" in the minds of an aggrieved group as, for example, among the Detroit black community toward merchants and the police. The third precondition is a failure of communication between the hostile and the dominant groups. Typically, this is expressed by the belief on the part of the dominant community that "rioters are hoodlums," and the conviction on the part of Negroes that "the man hasn't gotten the message yet" about the inequities and frustrations of ghetto life. Failure of social control is the fourth condition. Riots become police matters, although in many cases the police are powerless to correct the underlying causes of the riot.

Detroit residents and officials had a hard time believing that the riot was occurring. The news they received was met with a variety of reactions. One prominent concept was that it was a small "incident" that would be "managed" and calmed. Another was that due to the presence of some white looters it was not a racially motivated riot but an outbreak of the 12th Street underworld, suggesting that simply the criminal element was out of hand. Many other explanations were offered and continue to be offered in Detroit.

Many Detroit residents could still recall the riot of 1943, when Negroes destroyed property, as has happened in current riots, but in addition were attacked by white mobs, thus adding to the riot an element of interracial war. It was felt that the underlying problem in 1943 had been the competition for jobs that the newly migrated southern Negroes were presenting to the white residents of Detroit. The triggering incident was the misinterpretation of an event on the bridge leading to Belle Isle, a 985-acre island in the Detroit River, which serves as a recreation area for the city. Various rumors were circulated, for example, that a white baby had been thrown from the bridge by Negroes, or that white women had been attacked. A fight which quickly spread broke out between Negroes and whites.

In 1967 jobs were more available to Negroes, although this study still shows considerable feeling on the part of the white community that Negroes will take work from them. Detroit is generally thought to be a rather liberal city, yet many members of the white community advocated limited equality for Negroes in Detroit. The city has a spread of Negro and white areas and is sometimes referred to as a well-integrated city, yet it appears that most areas are integrated only because the whites have not yet moved out or cannot afford to change housing, not because the inhabitants view it as desirable or because whites are moving into the areas.

The triggering incident on July 22, 1967 was the raiding of a "blind pig," an after-hours drinking place on 12th Street in Detroit. That evening, according to the report made by the Kerner Commission, the Detroit Police Department raided five "blind pigs." It had been expected that about 2 dozen people would be present at the 12th Street location. Instead, it was the scene of a party for several servicemen, two of whom were back from Vietnam, and there were 82 persons present.

It was 3:45 a.m., but because it was a warm night many people were still on the street. The area was characterized by bars, small stores, and various other places of business. Large homes, broken into small apartments, made up the rest of the blocks. The area had a population density of an estimated 21,000 persons per square mile, nearly double that of the city average. About 25 percent of the housing was considered substandard and another 19 percent in serious need of repair. Only 18 percent of the residents were homeowners. The area was one of tense police-community relations prior to the raid. Other incidents that summer had convinced many Negroes that justice was different for them than for the whites in Detroit. The crime rate here was double that of the city as a whole.

As the 82 persons in the "blind pig" were moved from the scene, a crowd of about 200 gathered. By 7:50 a.m., an estimated 3,000 persons were on the street. Stores were broken into and looted, and fires were started. Reports of scattered sniping began. Rocks and bottles were thrown at the police. Additional police were brought in and the full-scale attempt to contain the riot began.

Spiegel describes the typical riot pattern. First is the precipitating incident, then a crowd gathers, and a confrontation between authorities and the crowd occurs. Then if nothing stops the riot, the "Roman

Holiday" phase begins with widespread looting, drinking, and a high emotional tone. Then full-scale war between the rioters and the police begins, until the force increases to the point where the riot is broken. This pattern was observed in the Detroit riot of 1967.

How the Word Spread

A study was conducted by Sheldon Levy, a professor of psychology at Brandeis University, to determine how Detroiters found out about the riot. A news blackout had been observed by the press and radio during the early hours of riot activity. Word of the riot first came on the radio and TV Sunday evening and did not appear in the Detroit newspapers until the Monday editions. As it became necessary to broadcast for National Guards to report for duty, more complete reports on the events of the riot were made to avoid any panic. By around 6 p.m. Sunday, full news was broadcast.

However, despite the news blackout, by noon on Sunday, barely 8 hours after the riot began, 23 percent of the whites and 46 percent of the blacks had heard the news. Before 10:30 p.m. that night, another 60 percent of the white community, and another 28 percent of the black community, had heard. By midnight, 89 percent of the whites and 94 percent of the blacks knew about the riot.

Most people first heard about the riot from friends, neighbors, or relatives. Only 4 percent of the blacks and 2 percent of the whites learned of the riot by actually witnessing it. Most people were at home when they first received word.

The investigators note that a formal news blackout does not prevent news from being spread when it is about a major event within the city.

Most people felt afraid when they heard the news. Indifference, however, was twice as common among blacks as among whites. The investigators speculate that this may be due to the greater expectation on the part of many Negroes that a riot would occur. Once they heard the news, most people (over 90 percent) devoted their time to keeping up with the events, mainly through TV.

For 70 percent of the whites and 59 percent of the Negroes, TV was the major source of information and radio the secondary source. Newspapers, appearing many hours after the events they reported, were third. During the riot, many hours of commercial time were donated by Detroit radio and TV stations to lengthy coverage of riot activity. It appeared that many Negroes followed these events closely, devoting 5 and 6 hours to keeping up with the news. Some 22 percent said they followed the riot on radio or TV throughout the day and into the night beyond normal waking hours. Only 9 percent of the whites devoted that much time.

More whites than blacks knew of the specific event that precipitated the riot. Some 71 percent of the whites cited a raid on an after-hours drinking club, while only 32 percent of the blacks were aware of this event. Although TV was overall the prime source of information, most whites who had learned of this raid knew of it from the newspapers. For the blacks who knew of the raid, the source of information tended to be different. About 24 percent learned of it from informal sources, 19 percent from TV, 16 percent from newspapers, and 11 percent from the radio.

Very few people escaped a profound emotional response. Fear was the most common initial response, and later even those who reported that they first felt indifference became frightened. Some people reported feeling personally upset. This was more common among Negroes than whites.

Most people felt concern for the safety of themselves, their families and their friends. Fear of the violence spreading was less frequently mentioned, and then chiefly by Negroes. Most people, in an effort to relieve their anxiety, remained home from work. Some got guns, but this group constituted only 9 percent of the whites and 2 percent of the blacks. Approximately 53 percent of the blacks and 18 percent of the whites said that they saw some riot activity firsthand. Most saw crowds of people and looting. Fifteen percent of the black respondents, but less than 3 percent of the whites, said that they witnessed shooting. About 20 percent of the whites and 38 percent of the blacks said that they tried to help those involved in the riots by offering such assistance as clothing or food.

The Arrestees

One group of interviews was done with a sample of those arrested during the riot. It is essential to note that "arrestee" is simply one who was arrested. The classification of "arrestee" in this study is not synonymous with "rioters" or even with "those who participated in the civil disturbance." The arrestee population also includes many who merely happened to be in the wrong place at the wrong time, as in the case of curfew violators or bystanders. Also, many who were thought to be involved in criminal offenses were not arrested.

The investigators warn that there is doubt that the arrestees fully represent those who rioted. The peak intensity of arrests occurred between 6 p.m. on the first day and 2 a.m. the following morning. Relatively few people were detained during the onset of the riot on Sunday morning. This was largely due to the fact that the city was unprepared for a civil disturbance and had only a small number of policemen on the streets. Later, when more police were mobilized, arrests went higher. Also, due to shifts in management and emphasis, arrests differed. For instance, as concern for property protection was displaced by anxiety about human lives, arrest patterns changed. In the 12-hour period after the riot started, police and National Guard troops moved into the area. Figures show that the largest number of fires were set on the second night of the riot at a time when the arrest rate abruptly declined. Thus, some rioters who committed serious offenses undoubtedly were not arrested. Finally, the number of women arrested does not accurately reflect female involvement because of the reluctance of the police to take them into custody. The investigators estimate that actually the ratio of male to female involvement in the riot was about 60–40. However, the arrestees were on the streets during the riot. They were at least accused by the police of being guilty of curfew violation, looting, setting fires, or some other offense. It was very frightening on the streets, and there were very few casual bystanders. At any rate, with these qualifying thoughts, the arrestee group comes as close as it was possible to find, to an active riot group. The problems of assessing this more accurately without infringing on a person's legal and civil rights, are considerable.

Personnel for this section of the research were drawn from experienced interviewers available in the city. Some were schoolteachers from central city schools, some were from local civil rights organizations and other such agencies. The race of the interviewer was matched to the race of the interviewee.

In all, 7,200 men, women, and children were arrested and detained. In this study an arrestee sample was drawn from a complete listing of approximately 6,500 persons who were 17 years or older when arrested. This list, which was furnished by the police department, included the name, address, place of detention, and the offense charged for each individual. Every 14th name was selected. Because of some duplications of names on the list, the study sample was slightly larger than would be expected. Although the majority were contacted, difficulties were encountered in reaching a large portion of the sample. In all, 292 persons were found and interviewed. Since interviewing was done a week after the riot, most of the respondents were interviewed in their homes. Of those contacted, most were eager to cooperate. The refusal rate was only 3.8 percent. It appeared that many actually welcomed the opportunity to unburden themselves and describe their experiences during the riot.

A comparison of police statistics shows the study sample to be a close approximation of the larger population. The police figures show that the total group was 87.7 percent male and 12.3 percent female; the study sample was 83.4 percent male and 16.6 percent female. The total arrestee population was 88 percent Negro and 9.7 percent white.

A study of the arrestee ages shows that the sample population is slightly overweighted in the 17- to 19-year-old group and slightly lower than the total sample in the 26- to 28-year-old group. The total population in the 17–19 group was 1,317, which comprised 20.2 percent of the population. In the study group 84 were in this bracket, which was 27.9 percent of the total group. Of those in the total group between 26–28 years of age, the percentage was 10.7 percent, and the study group had 19 or 6.3 percent in that group.

In a breakdown according to the offense charged, the study sample is representative of the larger group except for a slight underrepresentation in two categories; "carrying a concealed weapon" and "miscellaneous." Fortunately, the three offenses for which most were arrested, e.g., entering (a combined category encompassing both "breaking and entering" and "entering without breaking"), larceny (stealing from an establishment open for business—looting), and violation of government emergency procedures (curfew violations), all show highly similar proportions in the study and total groups. In general, the study population is a reasonably close approximation of the total arrestee group.

The interviewing instrument for the arrestee was a questionnaire covering such areas as basic demographic variables, past and present family structure, awareness of and attitudes toward Negro leaders and institutions, feelings about community forces such as store owners, police, etc. It also covered method of arrest and imprisonment, response to arrest, attitudes toward the riot and explanations of it, involvement in Federal programs, beliefs about the future of race relations in Detroit, and other topics. The Lafayette group based their interviewing procedure upon those used in the Los Angeles Riot Study by Dr. Nathan E. Cohen and his group.

Arrestee Characteristics

Age.—The single outstanding characteristic of the arrestees was their youth. Nine percent were juveniles under 17 years old. When those under 33 are calculated, it equals two-thirds of the group.

Family Life.—The study shows that only 35.5 percent of those arrested were married and living with spouses. A further breakdown shows that 25 percent of the whites and 39 percent of the Negroes were married and living with spouses. The U.S. census data for 1960 shows that 60.4 percent of the nonwhite males in Detroit over age 14 were married and living with spouses. The research team concludes that since the marriage rate increases with age, and their sample is over age 17, their sample is strikingly less-married than the general population of nonwhite males in Detroit. In the study sample the percentage of married men above 23 is about 60 percent. Almost as many of the unmarried older group were single as were separated. Very few were legally divorced or widowed.

In terms of background, 49.2 percent of sample of arrestees lived with their natural fathers continuously for the first 17 years of their lives. For the rest, the fathers left home somewhere between birth and their 17th birthday. About 20.6 percent never lived with their fathers at all. About 75 percent of the arrestees lived with their mothers continuously for the first 17 years of their lives, and 3.7 percent never lived with their mothers at all.

Only 50.2 percent of the arrestees selected their fathers as the adult male to whom they felt the closest. Some, 12.6 percent, felt close to no man at all. On the other hand, 75.4 percent felt closest to their mothers and 2.3 percent felt close to no woman.

The investigators acknowledge that even though the father was not present, it may be that other men served as father surrogates. They also admit that in some cases having the father at home was a problem and not an asset. They do feel, however, that the fact that so many of the arrestees felt close to no man and that many of those without fathers may never have experienced a long-term positive relationship with a man, may indicate that this group has had a serious lack of the kind of parental support, training, and identification that a father or father surrogate can provide.

The arrestees lived in a household with an average of 4.6 residents. The total population average in 1960 was only 3.4 residents per household for the standard metropolitan area.

Migration and Residence.—Fifty-six percent of the arrestees were born in the South, while 35 percent were born in Detroit. However, it can still be said that this is primarily a Northern urban group. The men and women who were not born in Detroit were long-term residents. Over 75 percent of that group had lived in Detroit at least 11 years. In addition, most came from Southern urban settings rather than rural ones. Only 10 percent of the Negro arrestees had lived in Detroit less than 6 years.

This issue of migration and residence is a complicated one. The Report of the National Advisory Commission on Civil Disorders, commonly known as the Kerner Report, stated that in Detroit and Newark most of the rioters were raised in the North. A theory was proposed after the Watts riot that rioters were typically "strangers in the city." This phrase was used by Robert Conot in his book *Rivers of Blood, Years of Darkness.* At least in Detroit this did not seem to be the case, for the arrestees generally were not recent in-migrants suffering from the shock of an overwhelming, crowded, disorganizing, urban setting. They were a fairly representative sample of the geographical sources of the younger black community of Detroit.

Education.—In general the arrestees had some high school education and almost half were high school graduates. Only 17 percent did not complete grade school. However, the younger ones were more educated than the older ones. Fifty-five percent in the 20- to 24-year-old group were high school graduates, and less than 5 percent did not go beyond grade school. Of the arrestees over 35 years of age, 37 percent had not gone beyond grade school and only 36 percent were high school graduates. However, a comparison with an age-matched sample of the whole black community shows that despite their relatively adequate education the arrestees have less education than the total group.

Employment.—Many of these issues mesh as employment is one of the key issues, and it appears that perhaps the arrestees were less able, due to less education, to compete for available jobs. For arrestees between ages 20 to 24, the unemployment rate was about 20 percent. Above 25 years of age the rate was about 14 percent. According to the Kerner Commission report, the unemployment rate for Negro males nationally in 1967 was 8.2 percent. Among married men the rate dropped to 3.2 percent. For teen-agers in the arrestee group the rates of unemployment were high. Of those who had finished school a third had no jobs. Only half of those still in school had jobs that summer. The total unemployment rate for the arrestees was 29.6 percent. The unemployment rate for the entire Detroit metropolitan area at that time was estimated to be about 4.5 percent.

A U.S. Department of Labor report also describes some of the employment characteristics of the arrestees. The average wage of those employed was $115.70 per week. The average factory worker in Detroit in July 1967 earned about $150 a week. The average wage in manufacturing for the Nation was about $120 per week. So while the arrestee group was paid about as well as the national average, they were poorly paid for Detroit. The Lafayette group found that many arrestees who were employed had been out of work against their will at some time during the previous 2 years.

The Department of Labor report showed that the blue-collar arrestees who were working had averaged more than 5 weeks of unemployment during the past year. In addition, about half of those interviewed indicated that they were in debt. One-half of those in debt owed for back rent or medical expenses. More than 50 percent owed less than $200. About 25 percent owed between $200 and $500. They found that one out of eight of the married prisoners was making less than $80 per week. However, more than half of the married men earned more than $120 per week. The Department of Labor report shows also that, as a group, prisoners without a high school diploma were almost as likely to be making over $120 per week as those with more education. However, considerably more high school dropouts than graduates were earning less than $80 a week. This study showed an unemployment rate in their sample to be about 22 percent, which they noted was about five times higher than that of the total city of Detroit rate. Here, too, unemployment was highest among teenagers. Only a few of the younger arrestees had participated in any local or Federal job-training programs.

The Lafayette group found that the arrestees were an employable group. Two-thirds held, or in the past had held, skilled or semiskilled jobs. Only 29 percent held unskilled jobs. Most of those in the last category were young. For instance, 43 percent of the teenagers held unskilled jobs. A substantial number in both the black arrestee and black community groups reported having been out of work within the last two years.

Police and Jail Treatment of Arrestees

A study was done of 233 Negro men to determine what had happened to them at the time of their arrest and how they felt about it. This group was drawn from the arrestee sample used in previous sections. Negro females and white males were excluded.

Of this group 45 percent said they were treated badly during the arrest process, and only 26 percent said that they were treated well.

The Lafayette group comments that the police were under tremendous pressure. A riot is an exceptional situation and rarely does a city have a police force that is truly experienced in riot control. Detroit was unusually conscious of the problem and had to a certain extent prepared for it. However, Lee and Humphrey, in their book on the 1943 riot, stated that "no police force can quell a riot once it has progressed beyond the initial stage of confrontation and the vanguard has been joined by a mass of the citizenry." Doctor Luby comments that no police commissioner can control the primitive hatreds and biases which such riots bring to the surface in some of the men under his command and which are then given overt expression to the detriment of the entire force.

At various times in the Detroit riot the police were given different orders. It was said that a decision was made at one point not to shoot looters in order to give human life priority over property. This caused an enforced passivity on the part of the police. The investigators speculate that this had its psychological effects. The fear and rage felt by the police, combined with sleep deprivation, caused many incidents that might otherwise not have occurred. One such incident is recorded in the book by John Hersey, *The Algiers Motel Incident*. Many of the arrestees interviewed gave examples of rude or abusive behavior on the part of the police. Nearly all, 224 of the 233 arrestees in the sample, spent some time in jail after they were booked. The vast majority were out in 20 days. Only 15 persons in the sample were detained longer than that.

Just over half (51 percent) were released on bond or on personal recognizance. Of those who posted bond, the money came from relatives in 63 percent of the cases. An additional 2.5 percent had bond posted by friends. Some 16 percent were released only after a court appearance. Another 19 percent were released when relatives intervened. Only 4 percent were aided in release by attorneys.

The investigators found that the people who cited brutal and insulting police behavior were those who held the highest antipathy toward the police. Those who felt the police treated them badly also tended to be those who viewed the riot most favorably.

Ninety-four percent of the arrestees answered "yes" when asked if the police beat people up. Eighty-four percent said that they had personally seen it happen. Only 35 percent of the arrestees claimed that they themselves were treated in a physically brutal way by the police, but 80 percent stated that they had been insulted or treated disrespectfully. Ninety-three percent said this form of police behavior occurred in their neighborhood and that they had seen it happen.

About 94 percent think that police use unnecessary force in their work, and about the same proportion said that police stop and frisk people without cause.

Most of the arrestees felt that the courts treated them fairly, and only 20 percent felt that some corruption might exist or that people got treated differently due to "pull." Some who felt that the courts were not impartial attributed differences to skin color or money.

Arrestee Interpretation of the Riot

In response to the question "what caused the riot," 50 percent of the arrestees said that it was a protest of some kind. Twenty-two percent blamed undisciplined self-interest (following others, getting something for nothing, etc.), and only 6 percent blamed individuals. About 15 percent said that they did not know. In response to a question as to whether the riot was a Negro protest, 60 percent agreed and 28 percent disagreed. Only 26 percent thought the riot was planned in advance. Most conceived of the riot as an unplanned, spontaneous expression of longstanding grievances. Ninety-one percent said that the riot was *not* a battle of black against white. However, there were many anti-white tones in the replies given.

A distinction was made by the arrestees between the events of the riot and its aftermath or outcome. The outcome tended to be viewed favorably and the event with some disfavor. Only a few were in favor of burning and looting and then usually with the idea that it was necessary for revenge or liberation.

A large group of arrestees felt that the white community would become more sympathetic toward the black community as a result of the riot, and only 11 percent feared long-term damage to this relationship. At the time of the study 49 percent of the arrestees expected another riot would occur.

The study showed little relationship between interpretation and ideological militancy. Age is an important factor. The younger arrestees were more in favor of the riot and tended to think that the black community was in favor of it more than did the older arrestees. Consumer discontent was related to riot interpretation. The greater the discontent the more likely the riot was to be perceived positively. The greater the discontent the greater the belief that a new riot would occur because problems would not be solved or that a new riot would occur unless they were solved.

It was also found that Negroes who felt socially distant from whites were more favorable about the riot. They had more antiwhite hostility and less hope that there would be a peaceful positive response from the white community. Social distance was defined by whether or not the arrestee said he had a white friend. About 62 percent of the arrestees said they had white friends and 37 percent said that they did not.

Comparison with Controls

A control group of Negro males living in the same areas as the arrestees was found. This includes, as does the arrestee group, Negro men from outside the riot area. The control group totaled 198 persons. The major goal here was to determine some ways in which the arrestee group differed from the general community group.

There were significant differences between the sample of arrestees and the control group. The arrestees were, on an average, several years younger, less likely to be married, and less likely to be employed. However, unemployment rates for both groups were higher than the national average. The arrestees were more often born in a large Northern city, usually Detroit, or if born in the South, more often than the controls came north prior to the age of 15.

The arrestees more often came from families in which the father had been absent for some part of his childhood than had the controls. They were less well educated than the general community group.

While the arrestees were less likely to belong to a civic organization, both groups had about four out of ten who said they belonged to a church. In fact, the information gathered showed the arrestees to be a strikingly unaffiliated group. Only 8 percent belonged to an organization related to racial issues. Two percent belonged to political groups, such as the Democratic or Republican parties. Only 2 percent belonged to even a PTA group. Those who did belong to groups tended to be labor union members which was almost necessary for employment in the automotive plants and not necessarily a group with which they were strongly involved or identified. This interdisciplinary team suspects that the number of affiliations a man has is extremely important in determining his willingness or inclination to riot. Men who do not have family responsibilities are more likely to be on the streets. Dr. James Hedegard of this research team uses the term "able to riot" to describe those men who are responsive to the excitement and lure of civil disorder and who are on the spot without enough community controls to inhibit their riot activity. The arrestees did not come from a group forced out of their homes by danger. They appeared not to have a higher general "grievance level" than the general community.

Those who were arrested were slightly less knowledgeable about Negro political leadership than were the community controls, but both groups were quite well acquainted with the names of leaders. Over 90 percent of the controls knew the national leaders and organizations purporting to represent them. They were least aware of local leaders, and surprisingly, least of all about the Black Muslims.

About 90 percent of the controls knew about such black leaders as Detroit Councilman Nicholas Hood, Stokeley Carmichael, Adam Clayton Powell, local militant leader Rev. Albert Cleage, Hon. John Conyers, Jr., Congressman from 1st District Michigan, and such groups as the NAACP, SNCC, and the Black Muslims. Of the arrestees, about 80 percent knew of such leaders. Virtually all in both groups knew about Martin Luther King. When asked about leaders they admired, Martin Luther King was very popular, which suggests that despite the riot the idea of progress through reform and nonviolent methods was still popular in Detroit. The NAACP was then more popular than SNCC or the Black Muslims. The popularity of the more militant or black separatist groups increased in the younger groups. This survey was taken prior to the death of Martin Luther King.

A large number in both groups felt that their lives had improved in recent years and would continue to improve.

Predisposition Toward Black Activism

The investigators found a group of highly militant angry young men who stood out from the other arrestees. This group was identified by asking the arrestees if they could imagine a situation in which they would participate in a riot and by asking if they felt a demonstraton to support school integration was a good idea—even if a few people got hurt. Those who replied positively to these ideas were more militant than the majority who were questioned and were more politically sophisticated and aware. When this group is combined with a small group of very angry arrestees, an interesting profile develops.

About 13 percent of the arrestees fell into this group. As a group they tended to have the following characteristics: Born in Detroit or arrived there by age 15; lost father before age 11; raised in great poverty by poorly educated parents; about 20 to 24 years of age; had experienced discrimination by white employers; felt exploited by merchants; felt intense animosity toward the police; socially alienated from whites; exposed to the concepts of black militancy; considered himself otherwise without political power; unaffiliated with racial or community organizations; and thought that another riot was on the way unless changes occurred. This group did not stand out from the total arrestee group in terms of education, employment, income, or marital status.

The investigators point out that it is difficult to determine without infringing upon people's rights whether or not they rioted if they were not arrested. It is also not possible to tell the role they played in a riot unless the individual volunteers it. The investigators speculate that this very angry militant group may have rioted and, if it did so, may have rioted out of a sense of social injustice and for a cause. It is not known if these were the instigators, the arsonists, the snipers, but in many cases this group would find these roles compatible. The investigators point out that people riot for different reasons and do vastly different things during a civil disorder. For instance, it may be that those who were relatively innocent, merely drawn in by the excitement, may be overrepresented in the arrestee group as they may have been the most easily apprehended. Arrest statistics, date of arrest, nor charges are really accurate in helping to assess this.

Grievances of Arrestees

Although the arrestees were not an apathetic hopeless group, they did have a number of grievances about life in Detroit. For many, the riot filled them with a sense of elation and pride. In terms of immediate reactions, many were not worried about long-term consequences. They found justification for anything that had been done in the long history of white exploitation of the Negro race. Some felt that they had "run the show" for a while and had "given the white man the message." Doctor Luby cites an example of one incident during an arrestee interview.

> "A fascinating kind of interplay occurred with a young black nationalist and one of our white psychiatric residents. Although the resident began the interrogation he soon found the roles reversed and realized with much discomfort that his subject was interviewing him. Backed up against a wall, he was bombarded by artfully phrased questions attempting to get at the doctor's feelings about rebellion. Having elicited some anxiety, the nationalist began to systematically describe what would be done to this com-

munity the next time, delighting in the growing unhappiness of his, by now even whiter, adversary. It was cat and mouse, black cleverly and sadistically teasing and playing with a thoroughly intimidated white physician."

Those arrestees who lived in the riot area complained about conditions in that section of the city. However, their complaints were not significantly different from those of the community control group. The arrestees complained about commercial establishments as a major issue. The two biggest complaints about commercial practices in the ghetto were that stores overcharged (73 percent said that this happened "sometimes" or "often") and that they sold inferior goods (60.5 percent). Furniture stores and grocery stores were the prime offenders.

It also appears that some issues were too large to mention when the arrestees were asked about "complaints." Police, a source of great concern and anger, were mentioned spontaneously by only 13 percent. Schools, jobs, etc., were similarly treated. Younger people made stronger complaints than older, except the older had had more experience with blatant discriminatory practices. Better educated people made more critical comments, as did those brought up in urban areas as opposed to those raised in rural areas.

The Community Reaction

The community samples of Negroes and whites were drawn from the entire city of Detroit plus several small cities nearby or surrounded by Detroit. The small cities were Hamtramck, Highland Park, the Grosse Pointe area, and Harper Woods. In Detroit the sample had double density within the riot areas. When finally completed, the samples included about 400 whites and 450 Negroes. The interviewers were those with previous survey interview experience, such as schoolteachers from central city schools and individuals from local civil rights groups. The race of the interviewer was matched to the race of the respondent. Respondents were seen in their homes. This same sample was used to determine how information about the riot spread. These interviews took place in September, October, and November, 1967.

Broad interviewing instruments were used to cover a wide variety of subjects.

Ideas About Why the Riot Happened

Two-thirds of the whites and 53 percent of the Negroes were surprised that a riot broke out in Detroit. About 23 percent of the whites felt that the riots were the work of outside agitators, while only 2 percent of the Negroes held that view. In about the same proportions, whites and Negroes felt that the riots were motivated by jealousy, greed, and/or a desire to get something for nothing.

About 10 percent of the whites felt that the riot was due to poor law enforcement. Negroes rarely mentioned this. Negroes most often spoke of lack of employment and income, housing, high prices, etc., as causes. Whites, when they did mention such issues, tended to give education and housing over the Negroes' emphasis on jobs and income. About a third of both races mentioned such things as frustration, restlessness, and deprivation. In general, the Negro community was sympathetic with the rioters as they perceived them. The white community was divided.

When asked if the riot expressed the way the black community felt, a minority of Negroes (25 percent) and whites (15 percent) thought so. Virtually all the rest believed the riot expressed the feelings of only a few black people. The majority of the sample also thought that few black people supported the riot.

It appeared that some whites became more sympathetic and others less so after the riot. However, Negroes tended to be more optimistic about positive change in white attitudes than this study would indicate is justified. However, a majority of the total group felt that more money should be spent to improve conditions in the ghettos.

It was found that only one white man in four supported full racial integration, while nine out of 10 Negroes supported this. About 16 percent of the whites supported complete separation of races and only 2 percent of the Negroes favored this. Ten percent of the Negroes and 58 percent of the whites favored a "partial integration." Sixty-six percent of whites and 98 percent of Negroes favored integrated schools.

Other Issues

This survey found that almost half of the whites think that whites are superior to Negroes in intelligence. Only 3 percent of the Negroes believe this. Most of the sample feel that the races are equally endowed.

Most people in the sample gave the same views about living in Detroit, about their concerns, and their hopes for their children.

Detroit whites in this sample tend to be older than Detroit Negroes. Detroiters are still moving out of the city so that those who have remained tend to still be there rather than to have chosen it. They are more concerned than the Negroes about violence in the city and they tend to feel trapped.

A difference shows up in that the polar groups in each racial division tend to see police work differently. The black people complained that the police were abusive, arbitrary, and prejudiced against the

Negroes. The whites tended to see the police as not tough enough or inefficient. Complaints from Negroes about police activity in their area were twice as high from those within the riot area as outside it.

Separatists and Integrationists

The 16 percent of the white respondents who were adamant about complete separation were studied in more detail and compared to the 26 percent who favored full integration. Compared to the integrationists, the separatists tended to be older, less well educated, more suspicious of people in general, and to distrust local and national government. Few claimed Negro friends, two thirds believed blacks to be intellectually inferior, and a large group felt them to be immoral and violent. Most opposed increased spending in the ghetto. They, like the black militants, felt they had little political power.

Members of both groups tend to think that the rest of Detroit has views similar to their own. However, the separatists tended to see more black support for separation than did the integrationists, and more than did exist. The slogan "Black Power" is more threatening for the separatists, who see it as symbolizing black racism, black domination over whites, or trouble and disorder. Integrationists are more likely to see the slogan as meaning "a fair share for the Negro," "black unity," etc.

A majority of both groups believed the riot was planned; that is, 83 percent of the separatists and 59 percent of the integrationists thought so. The separatist group was twice as likely to say that as many as half of the Negro community supported the riot.

The separatist group tended to see riot prevention in terms of a strengthened police department, improved police methods, etc. The integrationist group advocated programs to rebuild the ghettos, improve job opportunities, better education, and the like.

Educational background separates the two groups. About a third of the integrationists have had some college as opposed to only 3 percent of the separatists. The integrationists were more likely to have had better educated parents than the separatists. For the younger group, between 20 and 39 years of age, 57 percent of the integrationists and 10 percent of the separatists had some college background.

The two groups could not be distinguished by the political party affiliation. Roughly the same proportions belong to each party in each group and neither group differs in terms of party loyalty. There was a slight edge in political awareness in the integrationists, but overall neither group was considered politically aware. Less than a third of all respondents knew that the term of a U.S. Senator is 6 years. Both groups felt relatively politically powerless, with 81 percent of the separatists and 50 percent of the integrationists making this point.

Reactions to "Black Power"

The investigators became aware of the broad meanings associated with this phrase. They also collected some black interpretations of the riot and its issues. The riot elicited for many young Negro men expressions of pride and feelings of enhanced manhood. Many felt that for once they were active, on the move, and in control. While many felt disturbed about the damage and destruction, they felt in sympathy with the actions. Dr. Luby quotes one story that was told him several times during this research. "It concerned a tall, handsome Negro in a white Cadillac who rode up and down streets throwing bricks through store windows and then urging the assembled multitudes to take what they wished. The whiteness of the Cadillac drew particular emphasis as though it were a steed or charger, while the driver's physical dimensions grew with each retelling." The resemblance to "Robin Hood" is unmistakable.

In view of these feelings, reactions to the slogan "Black Power" were examined. Each of 855 respondents (394 whites and 461 blacks) was asked "what do the words 'black power' mean to you." It was found to provoke powerful reactions. About 40 percent of the whites see black power as synonymous with black rule of whites. This point of view is also held by 9 percent of the blacks. In most cases the whites reacted almost hysterically to the phrase. Among Negroes about 42 percent see it as a call for equal treatment or an appeal for racial solidarity in the struggle against white discrimination. The young Negro is less patient, but the study did not discover great differences in interpretation according to age. However, those who grew up in the North, particularly in Detroit, approve the idea of "Black Power" more than those raised in the South. This urban generation finds little solace in religions and has little hope for fair government dealings.

A few racist, antiwhite interpretations of "Black Power" were found, but mostly in those who were not sympathetic to black militancy. Some people were also very pro-black, but not necessarily antiwhite.

The study found "great restlessness" in the black community and a searching for new forms of political expression. While optimism exists, disillusionment also exists. The white residents of Detroit alone are not the only influential people. Many decisions will be made in Washington, in suburban city halls, and in Lansing, Michigan's Capital. This complexity of authority bewilders many and diffuses responsibility, but the young black community is not inclined to be easily satisfied. In fact, the investigators stress that there is nothing in their data to assure them that large numbers of Negroes are not likely to riot in the future.

Police

A group of 286 policemen, both Negro and white, were interviewed in Detroit. They were randomly selected from all ranks. Most were interviewed in the privacy of their homes for periods ranging up to 5 hours. This was done with the full cooperation of the police department.

By and large the policeman in Detroit felt that the riot was due to conditions such as a lack of respect for law and order, the desire to get something for nothing, or the work of agitators. Only in the upper ranks was there voiced the idea that the riot might be in response to racial discrimination, etc.; the notable exception being the view of black policemen at all ranks. None of the black policemen attributed the riot to a lack of respect for law and order, and only 7 percent of the 36 black policemen blamed agitators. The Detroit Police Department at that time was 8 percent black patroling a city which was 40 percent black.

Patrolmen and lieutenants had the most ominous view. They were likely to see the riot as the work of conspirators or a general breakdown of law and order. The general view of this group toward the black community was that they were a badly controlled group highly influenced by agitators and ready to use violence to gain advantages over the white community.

Nearly two-thirds of the white patrolmen believed that the riot was planned in advance. Only 22 percent of the black officers believed the riot was planned in advance.

White officers tended to hold the impression that the riot would have long-term negative effects. About half the white officers in every rank saw the negative results such as the Negro cause being set back and the likelihood of another riot increasing. Less than 20 percent of the black officers had this view and about half of them expected positive results in terms of community understanding or increased opportunity for blacks.

However, all policemen felt that the riot brought Negro problems more to the attention of whites than previously. The white policemen tended, however, to feel that while white people were made more aware they were not made more sympathetic. Among black officers, however, there was a three-way split: one-third predicted a trend toward greater sympathy from the white community; one-third predicted less sympathy; and one-third anticipated no change.

Officers of both races were quick to defend the Police Department when it was criticized. They almost all, 90 percent, agreed that it was frustrating to stand by and watch looting during the riot and not be able to act. Both Negro and white police felt the police had done a good job during the riot, and both groups felt that the real offenders, not just innocent bystanders, were arrested during the riot.

The investigators found that, by and large, white policemen do not feel that blacks face discrimination. Fifty-six percent of patrolmen think blacks are treated, as well as if not better than, whites with regard to housing. Sixty-seven percent of white patrolmen agree with this. Two-thirds of the black officers say Negroes are treated "very unfairly." About 95 percent of the white officers said that Negroes get equal or better treatment in schools while only 17 percent of the Negro officers agree.

Over 70 percent of white officers in all ranks except inspectors, where the percentage is 59 percent, believe Negroes get equal or better treatment in finding jobs. Among black officers 80 percent say the treatment is unfair or very unfair. The vast majority of white officers think that Negroes are treated the same or better than whites in stores. Only 39 percent of the black officers agree.

In terms of law enforcement, the majority of white officers say that Negroes are treated the same or even better. Eighty-seven percent of the black officers say that treatment in this area is at best unfair.

Black officers did feel that Negroes had equal treatment from the welfare department, and here the white officers feel that welfare agencies favor blacks.

It appeared from the study that all policemen tend to judge people more by their social class than by race, but that there is a tendency on the part of white policemen to attribute lower-class status to a Negro unless it is otherwise established. Then again within social class the white policemen tend to feel that the Negro may have less respect for law and order than a white.

All officers perceive a decline in respect for law and order over the last 5 years. At the time of the study they were optimistic and felt that this would again improve and in another 5 years be back at a previous level.

White policemen tended to think of the black community as distinctly antisocial. They tended to explain black antipathy toward police as the general attitude of the criminal toward the law. Here the higher ranking inspectors differed, as they often did, from the men in the lower ranks. Not one inspector believed the black community to be antisocial, but many recognized that discriminatory handling of the blacks by policemen was a factor in strained relations. The black policemen attributed the negative feelings of the Negro community about the police to resentment about prejudicial behavior and previous abusive handling. At the very least, they recognized that this was the way police behavior was often perceived. Only 6 percent believed that the antagonism was due to the antisocial nature of the black community.

When asked why whites sometimes feel negatively toward the police, the general answer by the officers was that perhaps they had had unpleasant experiences and that everyone hates authority a little bit.

A much more understanding and sympathetic answer.

Throughout most questions the inspectors were more enlightened and understanding than the men at the lower ranks. They tend to have been more exposed to sociological concepts as well as to different levels of community planning and action. They work with educated and well-to-do Negroes as well as with slum dwellers. They are in touch with many points of view and also are insulated from day-to-day slum contact. The lower ranked white officers tended generally to feel like the rest of the white community. They grew up there and reflect general attitudes. Half of the officers' fathers had no more than a grade school education, and more than 80 percent of them came to the police department from blue-collar jobs or the military. There is also the fact of day-to-day police work contributing to negative impressions. This is again dramatically pointed out in *The Algiers Motel Incident*, which describes the effect on a policeman of being assigned to the vice squad early in his police experience.

These interviews lend support to the idea that many factors contribute to rough police behavior. The reasons given by all policemen are stress, tension, and overwork. The white policemen also stated that they felt that the riot demanded a firm approach. They felt that the police must compel respect rather than win it. The black policemen differed with this point of view and felt that the way to control a riot had to be determined by an assessment of community control.

The investigators suggest that positive changes could occur, and they make the following three suggestions:

1. Police officers should be trained in social processes. They need to understand that real power must be granted by the community. Police-community relationships must be stressed. It would be helpful if police could work with black citizens in more positive contexts.
2. Officers in command during unrest or riots should be well trained and in firm control of other policemen on the spot.
3. A higher proportion of black policemen should be assigned to work in Negro areas. The number of black policemen on the force should be substantially increased.

People Dislocated by the Riot

A large number of persons, 202, were interviewed at the time of the riot in the food distribution centers or at some temporary place of lodging. No effort was made to obtain a representative sample; people were simply interviewed as they waited to receive assistance. Interviews were held in public in what tended to be noisy, chaotic places. The interviewers were from the Lafayette Clinic staff and were psychologists, social workers, and psychiatric residents. No effort was made to match the race of the interviewer and the person interviewed.

Of the 202 persons, 91 percent were Negro and 57 percent were female. The age range was 11 to 82 years. Most were poor, with incomes of about $3,400. Most had not finished high school. Most were former residents of the riot area. There were indications that this was a particularly passive group; many people who were in their situation managed to take care of their needs without resorting to the help given at the temporary centers. It was not felt that this group was necessarily representative of the ghetto Negro population, or even of the larger group of dislocated Negroes. However, it is felt that these interviews do capture some of the feelings of this rather middle-aged and poorly educated ghetto group.

As a group, their reactions were rather bland, as though this was another in a series of uncontrollable catastrophies which had to be endured and accepted. The elderly men and women tended to adopt servile attitudes similar to the older ingratiating ways of relating to whites. They appeared to share a collective guilt and a sense of shame about the looting and burning, despite their technical nonparticipation. The older Negro man tended to express his inability to understand the massive destruction and the disrespect for law and order. The most common explanation offered was that it must be due to parents failing to discipline their children.

A clear-cut generation gap was noted here. The Negro man beyond forty tended to disavow civil disorder and felt it served no useful purpose. The fear of white retaliation was implicit in many of the responses and in the conciliatory tone of the interviews. The young Negro male seemed less concerned about retaliation and tended to find justification for the riots in the long history of white exploitation of Negroes in this country. There was considerably less shock on the part of the young man, more impatience, and less faith that traditional processes would yield equality.

The group of dislocated Negroes had their own ideas as to the cause of the riots. The majority, about 108, saw it as a spontaneous outburst of the minor underworld of the 12th Street area—the hoodlums, the pimps, and prostitutes. Some, about 46, thought it was organized and believed that it was led by either Communists, Black Nationalists, or some other militant group. Police brutality was blamed by 25 who thought that the population of the riot area had been provoked through either physical attack or verbal abuse. Nine respondents mentioned racial prejudice, and seven attributed the cause of the riot to unfair local shopkeepers. Six persons felt that everyone was at fault. Politicians were blamed by three respondents. A few people reported hearing rumors about out-of-town cars pouring into the city prior to the riot.

In general, the dislocated persons were quietly resigned. One woman told an interviewer how her home had burned with all her possessions inside it. As it burned, a firetruck drove past and she called to the firemen for help. They answered that they could not stop because they had been fighting fires all day and were too tired to assist her. When the interviewer asked how the woman reacted to this, she could only say: "It was true, they were tired. I watched them fighting fires all day." She went on to describe the things she lost that had had a special meaning to her: a piano that her deceased mother had given her, her marriage certificate, her children's graduation pictures, etc. She then began to weep and said it was the first time that she had cried about the events of the riot week.

The same feeling of helplessness was expressed by a 30-year-old man. He was unemployed and had two children to support. During the riot he saw police shoot one of his friends. The man had been running and failed to stop when the police yelled, "Halt." The man received a shot in the leg. The man being interviewed said that he was angry, but the interviewer noted that he didn't seem angry when he talked about it. The man then added, "At least they only shot him in the leg."

In contrast to the arrestees who felt increased pride in their race, the dislocated group felt shame and guilt despite their lack of active participation. A 33-year-old day worker wept and said, "It was the first time in my life I was ashamed of being Negro. We were wrong." A 17-year-old girl "felt ashamed, because adults, who were supposed to set examples for children, were not only looting, but were burning, too. It's shameful for grown-ups to act like this." A 59-year-old mother who did domestic work, in addition to raising her own family, said, "I felt guilty going into a white grocer's to buy food after Negroes had broken his windows," and a 16-year-old youth thought, "It hurt to see everyone out there acting like a fool."

This dislocated group tended to believe that Negroes gained nothing from the rioting. One 50-year-old man said, "It's disgraceful, terribly damaging to the Negro. Negroes suffered the most and will continue to suffer." One young man, aged 23, had lost his job because of the riot and he felt that riots can only bring harm. This group felt concern that they personally would suffer from the negative reactions of whites. Several stress that they hope that whites will realize that not all Negroes wanted the riots. One man, a factory worker, aged 37, with seven children, told how he perceived the white reaction to the riot.

> "Whites will be suspicious of Negroes. The men I've worked with for years are now looking at me, wondering. This tension between the guys at work was decreasing a little by the third day back at work, but it'll be a long time before they really get over it. I always did get along well with the men, except now I feel I have to watch what I say. I work with a lot of Southern whites and they don't want a Negro saying much, so I keep quiet."

One woman expressed a fear of white gangs avenging the riots. Another woman thought it was a step toward black separatism. She felt the riot had been organized to help force through a "new country for the colored."

The dislocated respondents also displayed passivity and resignation when they were asked how they felt about the way the police handled the riots. They tended to think that the police and the firemen did a "magnificent job." One man, aged 34 and the father of four, felt that more repression was in order and that "the police could have stopped it if they had been more forceful." One woman suggested that the "police should have stopped it by shooting looters."

However, many of the dislocated complained about a lack of police protection not only during the emergency, but all the time. The general feeling was that the police let crime go on unchecked in their neighborhoods. The police are described as being unreliable and unpredictable. People said that when they called the police they often got no response or a very slow one. One woman who had lost everything in a fire focused her anger on the lack of law enforcement which had allowed prostitution to continue on 12th Street.

Emotional Reactions Among the Dislocated

Most people interviewed admitted to experiencing fear during the riot. Many of these people had endured very traumatic experiences such as being caught in cross fire between snipers and police or seeing fire burn out of control. Worries about family and possessions were common. Many felt confused and dismayed. The research group was interested in the effects of such trauma. The first part of the interview schedule was actually the routine admission sheet to Lafayette Clinic. The items covered included basic demographic data and a psychiatric status assessment. This enabled interviewers to make note of the emotional state of the respondent at the time of the interviews.

One common finding was that all who were involved in the riot were searching for an explanation that would make sense to them and would help them absorb the situation. A small number were emotionally disabled by severe anxiety or depression. Some people were able to avoid disabling emotional reactions by employing denial and avoidance mechanisms. One woman, for instance, lost her house and everything in it, but her neighbor would not allow her to talk of the fire or the loss and this "cheered her up." Another pulled the shades down and stayed inside during the riot. Several others did housework or scrubbed floors during the riots to keep their minds off what was happening.

The most frequent physical reactions reported were nausea, loss of appetite, and headache. These symptoms were apparently experienced during periods when real danger existed, and they disappeared when the dangers were over. A few elderly people interviewed had experienced some periods of heart failure during the tense days of the riots, and one went into an early diabetic coma precipitated by the excitment and the concern that he would be unable to get the medication he needed. These reactions were considered by the investigators to be physical manifestations of anxiety.

Some individuals had reactions that were clearly psychiatric. The people who reported such symptoms during the riot were those who already had a history of psychiatric symptoms. A 16-year-old who had stabbed his father in a fight years before had a revival of some rage. He had received psychiatric treatment for his problems, but during the interview he stated that he had felt angry during the riot and had wished that he had had a gun and could burst into a crowd of looters. Several people became more nervous. A 59-year-old domestic worker who had been taking tranquilizers for several years said that during the disturbance she was "anxious, so shaky that I had to lay down most of the time." A 64-year-old woman also reported that "I was really nervous, sad, couldn't eat or do anything. I walked from door to door." A 50-year-old woman saw a woman bleeding during the riot, and it revived in her the feelings and symptoms that she had had when her mother died 6 years earlier. She felt a choking sensation, compulsively washed her face five times a day, kept checking her locks, and took pills for her nerves. Although a few people commented that they felt sad, there was very little significant depression seen by the interviewers.

An interesting group of men was seen. They could identify with the feelings of the rioters, but did not become involved themselves. They all had children and were concerned about their role as fathers. They all wanted their children to have better lives than they themselves had. One man said he would have rioted if he had been younger. He said that he had been wild until his third child was born when he began to think about what kind of a father he was. Another man, aged 30 and father of three, said he was not involved, but that he might have been if he had been younger. He said:

> "If I was single, I would have been out there, too, getting something for nothing. Sometimes now I feel like I missed a good chance. I wouldn't have gone to a dry cleaner's. I'd go after something worthwhile if I'm going to risk getting killed or arrested. I don't feel bitter to everyone, but sometimes I see you wearing clothes I want. There were jobs I wanted that I couldn't get. When I got out of school there were no Negroes in the electricians' union and I know I could have done as well as some other electricians."

A third father, aged 47, said he didn't join in the rioting because he felt "two wrongs don't make a right." However, he asserted that "men can't stand and take this a lifetime—a Negro man is always 'boy' to a policeman, no matter his age. If a man does wrong he should be arrested, but not abused."

Followup After 6 Months With the Dislocated

Of the 202 persons interviewed at the time of the riot, 23 claimed that they left their homes because of fire or fear. Six months after the initial interviews, three psychiatric social workers conducted followup interviews to determine what had happened to these 23 displaced persons. Agencies that had worked in relocation were contacted. The Department of Public Welfare was asked to help in finding them. The old neighborhoods were revisited. Registered letters were sent. The post office reported difficulty in finding many people and commented that some had mail still waiting for them which had been undelivered during the riots. Even after all of this, only six of the 23 could be located. In some cases the research staff had failed to get enough identifying material at the time of the original interview. In other cases the relocation agency had failed to keep records during the press of meeting urgent needs. The investigators also raised the suggestion that the riot may have given some people an opportunity to escape bills and other pressures.

The intent of the follow-up interviews was to find out what had happened to these people as an aftermath of the riot. They were asked about their new communities, their second thoughts on the riots, and about what had happened to them in terms of assistance from the community. Most of the interviews were held in their new homes.

Generally, the interviewers felt that the respondents appeared passive, apathetic, and helpless. In the initial interviews at the time of the riots, most people had wanted to be interviewed and had welcomed the opportunity to describe their experiences. At that time most took part without questioning the interviewer's identity, position, or the purpose of the interviews. The investigators note that many talked as though they were accustomed to being questioned without really knowing why. For instance, one mother receiving Aid to Dependent Children, began to list her children and the names of their fathers when the interviewer hadn't even asked for that information. In direct contrast to such passive compliance, a more aggressive middle-class Negro who was working as an official at a food distribution center became enraged at the interviewers and told people not to answer their questions. Even in their own homes the respondents displayed the same passive acceptance. One young woman invited an interviewer into her home even before the interviewer had an opportunity to explain why she was at the door. Open hostility was not common, but animosity was sometimes expressed in subtle ways. One respondent laughingly told the interviewer that his neighborhood was so bad that she might find her tires slashed when she returned to her car.

One senile lady, aged 82 years, deteriorated to the extent that she had to be committed to a sanatorium as a result of losing her familiar environment. Although she was senile and suffered from visual hallucinations, she had been able to maintain herself for a number of years in her old apartment. After her building was burned, she was taken to an emergency housing shelter and then placed in another apartment. She was unable to adjust to this one and was found wandering aimlessly. She was placed in several nursing homes, but again wandered off in a confused state. She was then committed to a hospital for psychiatric care and then to the sanatorium. The abrupt changes in her living quarters plus the trauma of the riot had resulted in rapid deterioration.

Another woman apparently suffered a prolonged emotional disturbance. She was 23 years old and had three children. She showed signs of depression, cried, forgot things, kept the children inside the house, and kept the blinds drawn. Her doctor recommended hospitalization, but there was no one to care for the children. She was 6 months pregnant at the time of the riot, and in the followup interview after the baby's birth she stated that she had been depressed at the time of birth. She blamed the riot as she had never had this pattern before. She moved into a high-rise city housing project after the riot. She had no friends there and could not find a reliable babysitter. Shopping was difficult as there were no stores nearby. Cabs and buses were inadequate. The entire situation left the young woman feeling very isolated and overwhelmed.

A family of two parents and eight children made a good adjustment although they moved a considerable distance to a housing project. The father was able to maintain steady employment, and the Salvation Army helped them replace furniture that had been burned. They were accustomed to traveling by car and continued to do so to shop, etc. The children missed old friends but became involved in school and community activities very quickly. The parents maintained old friendships by telephone and visits.

Another family, a mother and five children, had gone to emergency housing because of fear of gunfire. After the riot they moved into another apartment in the same building. The entire building was in extremely poor condition with holes in the walls and rats around. The walls were covered with roaches during the interviewer's visit. In spite of this the respondent said, "He's a good landlord. He don't bother me none." Although she remained in the same neighborhood her life was more difficult because her local stores had burned down. She worried about the disrespect for law in the neighborhood and the effect that it would have on her sons who already had records for delinquent behavior. Her anxiety increased after the riot, and she began using tranquilizers and wondering what she would do if violence broke out again. The interviewer felt that the family was beset by chronic problems brought about by the mother's way of life but that these problems had been heightened by the riots.

A young couple and their five preschool-age children moved into an apartment which a relative had located for them. The father complained that the plumbing was in disrepair and that the house was infested with roaches. The landlord said he could not afford good maintenance. The apartment was similar to their previous one, but more expensive. They had lost everything in the fire and received furniture from relatives and clothing from the Children's Aid Society. The father had been a porter in a bar located beneath their old apartment. He had earned about $40 a week. When the bar burned during the riot he tried to support his family doing odd jobs, but he had to get assistance from Aid to Dependent Children of the Unemployed. He then became employed by Chevrolet at $127 per week. He obtained the job through a special program set up by Chevrolet for ADCU recipients. This program waives the written examination usually required for employment.

The sixth person was a 47-year-old domestic worker. Her boyfriend lived with her, and he was present at the time of the followup visit. They had been burned out of their old apartment and found another one the next day in the same neighborhood. The Salvation Army gave them furniture, and although the house was shabby, their apartment was comfortable and neatly kept. The respondent's life remained essentially unchanged from what it had been before the riot. However, she had not been able to replace all of the furniture or clothes lost in the riot, and the local stores were gone which meant she had to travel further to shop. She was still doing daywork in the suburbs which required that she leave home in the morning at 5:30 a.m. She did not arrive back at home until 6:30 p.m., and she earned $9 a day. She had no symptoms of physical or psychiatric disturbance. Her boyfriend formerly worked in neighborhood stores doing odd jobs. After the riot he was unable to find any employment. He slept poorly and he felt that the neighborhood had deteriorated. He reported that gangs of men were out in the street drinking and yelling and that he was apprehensive. He was afraid that the house would be set on fire. The couple appeared limited in education and gave the impression that they had always been poor.

The investigators stress that they do not consider this group representative of the Negro community, nor even of Negroes displaced by the riot. The introduction of white interviewers is a factor that cannot be fully assessed. The individuals in this follow-up study were from ghetto areas and from low socioeconomic levels. It is evident that people who live on a marginal income are the least able to cope with any disaster.

Conclusions

This research was done in a time of stress when a city was virtually disrupted. The need to express themselves and the desire to understand this unusual experience led many people to be openly eager for an opportunity to talk about their experiences. Some groups, primarily those such as social agencies or police groups, appeared to feel threatened by research or investigation as they seemed to fear that the riot itself was evidence of some failure on their part. Of the sections of research reported here, some of the major conclusions are:

- Many people living in the riot areas will be serious victims of the riot. Those who are particularly passive or who have few resources will be very hard hit and need community help to get reestablished.
- Many people who were displaced by the riot and who had been through terrifying experiences tended to view it in a rather bland and unquestioning way as though the riot and its sequelae were only part of a series of uncontrollable and devastating events in their lives.
- There tends to be a gulf between older and younger Negro men in terms of their perceptions of the riot and their response to it. The Negro man over forty tends to be against riots and to have very mixed feelings about them. The younger man is more likely to be militant and to have a sense of pride in the riots and, if he was an active participant, about his role in them.
- Most Negroes in Detroit at that time had great respect for Martin Luther King and favored a moderate approach to attempts to change conditions. However, the younger the man, the more likely he was to favor a more militant approach and more militant leaders.
- Many Negroes feel that their community gets poor police protection. Many feel that the police are abusive physically or verbally or both. Most who felt that had had some bad experiences with the police.
- White people tended to think that Negroes were quite united in favor of rioting, and they found this very frightening. Only some Negroes were in favor of rioting, and they also were frightened. Many also feared that whites would arm themselves and retaliate.
- Family ties tend to make Negro men less likely to riot. In particular, one group of fathers was seen who felt strongly that they would have rioted if they hadn't been concerned about their paternal responsibilities.
- The arrestee group tended to be hometown Detroiters. Until the figures are more closely examined, the arrestee group appears to be fairly well employed, but after analysis of the figures it is obvious that they earned less than other Detroiters and suffered a much higher rate of both unemployment and layoff time.
- More than a third of the Negroes, both those arrested and the controls, had no white friends.

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- Relative to white Detroiters, the Negroes interviewed lived in more crowded and poorer areas, in older and less spacious houses, and had lower incomes. Their areas also had higher crime rates.

With regard to emotional and physical stress, it was found that psychiatric symptoms of a serious and persistent nature tended to be found primarily in those who had previously had such difficulty. However, many emotional conditions were seen at the time of the riots. Anxiety, tension, depression, apprehension, and so forth were common. Nausea, headaches, and the inability to eat or sleep were also seen. Some individuals suffered from physical stress and responded with heart attacks or diabetic problems. In addition, many thousands were injured and many more than that were seriously frightened.

The investigators feel that two concepts are essential to investigating the riots. One is that the city extends out and encompasses the suburbs in terms of its society. The suburbs are a part of the picture as is the ghetto. The other is that the riot is not simply an isolated incident, but part of the whole sweep of the history of the city and must be seen in terms of what came before it. It is simply not enough to say that the riot can be understood in terms of what started on July 23, nor is it sufficient to examine the events of July 22 for precipitating causes. It must be viewed in a larger perspective.

Research in this area is difficult. One problem is that civil rights must be respected. A person must not be asked what he did during the riot, nor can a person's past be investigated without his permission and understanding. A person must not be invited to incriminate himself or be subjected to unusual procedures simply because of a riot.

A final conclusion was that there is a seriously alienated group of young men who are not affiliated nor bound in any meaningful way to their community. They are bitter and cynical about traditional methods of reform and redress of grievances. As these young men who are increasingly militant grow up, and as other younger and possibly more militant young men join them, our cities face an increasingly serious crisis.

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INTERDISCIPLINARY STUDIES OF MANIC-DEPRESSIVE PSYCHOSIS

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In recent years a number of psychiatric investigators have come to feel that an interdisciplinary approach to the major mental illnesses, one that integrates metabolic studies with finely detailed observations of behavior, is the most promising route to the goal of understanding these disorders and devising rational treatments for patients. This is the conviction of Dr. Ronald R. Fieve who has established and is now directing an interdisciplinary group studying the mood disorders, mania and depression, at the New York State Psychiatric Institute. The Institute is located in the complex of buildings comprising Columbia University's College of Physicians and Surgeons on the upper west side of Manhattan. Doctor Fieve is Chief of Psychiatric Research in the Department of Internal Medicine there, and Assistant Professor of Clinical Psychiatry at Columbia College of Physicians and Surgeons.

The group of Columbia researchers and their various collaborators have brought an array of specialized skills to bear on questions about the affective disorders. Investigators in pharmacology, biochemistry, and electrolyte physiology are associated with the research program. Of the group's principal members, Dr. Fieve is an internist as well as a research psychiatrist; Dr. Stanley R. Platman is a psychiatrist with a strong background in endocrinology; Dr. Robert Plutchik has extensive experience in clinical and experimental psychology; and Dr. Leslie Baer is an internist whose special research interests lie in electrolyte metabolism and the control mechanisms of aldosterone and renin secretion.

In general these workers are trying to learn more about the biological and behavioral events that characterize different phases of manic-depressive psychosis. Laboratory animals are the experimental subjects in some of their investigations. For instance, the goal of one series of studies is to devise model states in animals that would be analogous to man's extremes of mood. Most of their work, however, is clinical investigation in which the subjects are patients who have come to the Institute for treatment of recurrent manic and/or depressive episodes. The therapy given to patients is psychoactive drugs, and these agents also serve as the chief experimental variables in the clinical studies. Thus, in brief, specific metabolic and behavioral parameters of a patient-subject are thoroughly evaluated during an initial drug-free period. Medication is then prescribed and, throughout the course of drug therapy, these parameters are scrupulously monitored for changes induced by drug action. In the acute metabolic studies, each patient usually serves as his own control. The researchers must also be alert to changes that occur spontaneously unrelated to the drug treatment; this precaution is particularly necessary in studies of affective illness because the course of illness, including the timing of remission and recurrences, is unpredictable in any individual patient afflicted with mood disorder. In any case, their strategy requires that the two sorts of data—biological and behavioral—be gathered concurrently from individual patients.

The setting for these exacting studies is a seven-bed metabolic ward, which opened in February 1965. The ward is like a sealed, self-contained laboratory in which both strict metabolic control and comprehensive behavorial observations can be made of the patients who live there. Patients' well-being and the rigorous requirements of research dovetail under the expert supervision, day in and day out, of the highly trained special research nurses and their supporting staff. Facilities for complete urine collection are there, as is a specially equipped kitchen where a dietician can calculate precisely the quantities and constituents of patients' food and fluid intake. In addition, a laboratory for performing biochemical determinations in minute samples of patients' urine, blood, or spinal fluid adjoins the ward and a total body counter was recently installed in one room. This instrument is being used in collaborative studies with investigators at nearby St. Luke's and Presbyterian Hospitals. With elegant techniques utilizing radioisotopes, the researcher will follow the metabolic fate of various substances in patients' systems—minerals like sodium and potassium, for example, which may be critically involved in the genesis and continuance of affective illness.

A number of technically advanced methods like this are available today to explore one or another aspect of biological functioning. While such tools are essential to the investigators' work, reliable methods for observing and evaluating clinical state are equally important and rather more difficult to obtain. The Columbia group has devoted considerable attention to the behavioral measures they use in their studies.

A number of different tests, interview schedules, and rating scales are employed. Some of these yield broad assessments of intelligence or of behavior—for example, the two standards of clinical evaluation, the Wechsler Adult Intelligence Scales and the Minnesota Multiphasic Personality Inventory. Others were designed to tap aspects of interpersonal functioning. Still others are used to measure dimensions of mood specifically. For instance, the Zung and Zuckerman scales have been introduced to provide an index of the depth of depression and other affects being experienced; they are completed by the patient himself. The Emotions Profile Index, another self-rating scale of mood, is based on concepts developed by Doctor Plutchik. It has been a key measure in these studies (see below).

The investigators believe it is important to assess behavior from many different aspects and to do so at a variety of time intervals. Thus, certain of their measures are used only infrequently for any single patient—say, on admission and discharge—while other measures may be used every week or once a month or at some relevant point in treatment, or, for example, during a cyclic change in mood. To get behavioral observations very closely spaced in time, the researchers have developed two observation forms. One is the Nurses Hourly Observation Ratings (NHOR), which covers the hours of normal wakefulness, and the second is the Sleep Rating Scales, which spans the remainder of the round-the-clock observation vigil. The ward nurses are responsible for completing these forms and each has received intensive instruction and experience for the task.

The layout of the metabolic ward permits the nurses to make their observations relatively unobtrusively. The patients' dining room and day-lounge, a light and airy room at one end of the ward, is entirely open to the view of the nurses' office, which is located in a corner of the room. In practice it works this way: For a 30-second period every hour during the day, a nurse observes the patient and, following NHOR procedures, judges and rates what she sees on the form. There are four major categories of behavior—speech, emotional activity, general activity, and socialization. A number of specific behaviors are listed under each category heading, and a nurse checks those that are occurring during the observation period. Under the heading of speech, for instance, a nurse records whether or not the patient is speaking and, if so, whether he is speaking to himself, to the room at large, to one other, or to many others. At night, a nurse rates the patient every hour on the question of whether or not he appears to be asleep. In the morning, both patient and nurse make independent ratings on the quality and quantity of sleep the previous night.

These bits of information are consolidated at the end of 24 hours and arranged into a profile of the patient's behavior. Such profiles can be constructed day after day and, if the patient is undergoing change during this time, they will provide an objective record of the quality and quantity of the change in considerable detail and in small, discrete time segments.

The investigators have compared their technique of frequently sampling a variety of specific behaviors to another method that was developed at NIMH for close observation of individual patients. The latter method requires nurses to recall, at the end of each 8-hour work shift, how a patient behaved during that period; a nurse rates each patient on a scale of 1 to 15 on several relevant behaviors and affects. Doctor Fieve has noted that, although reliability is equally high for both methods, the frequent-time sampling method consistently yields data of greater validity.

Taken together, then, the many different measures used by the Columbia researchers yield a comprehensive picture of the nature of the patient's clinical state and of subtle and marked changes through time. Doctor Fieve has noted that close attention to the timing of clinical change is a critical factor in studies of affective illness because the intensity and duration of manic or depressive episodes, as well as the frequency of recurrence, are fundamental research issues.

Another basic issue in such studies, one literally inherent in any problem involving affective disorders, is some working concept of emotion *per se*. How are emotions to be thought of? What is their nature and function? What relation do they bear to overt behavior, to personality? Although questions like these need not be explicit in clinical research on depression and mania, they do form a part of the requisite theoretical framework within which the studies proceed. Their relevance becomes apparent when, for example, different investigators are asked to specify just which emotions are implied in the diagnostic categories of depression and mania. Results will be muddled if various workers in a research group are not really talking the same language. In these matters the Columbia group has been guided by the ideas of Dr. Robert Plutchik, who has long been concerned with fundamental questions about emotions.

A Theory of Emotion

Just what is an emotion? Most of us equate emotions with feelings, that is, with highly subjective inner experiences that are impossibly difficult to describe with precision. We use words drawn from every corner of our vocabulary to talk about feelings and are never quite satisfied with the results. We honor poets because they have more success with words than most of us. But if the language of introspection is too vague and inadequate even for those who command it well, it is probably altogether irrelevant where the inner experiences of young children, of infants, and, of course, of animals, are concerned. In view of these difficulties, Doctor Plutchik has concluded, the most sensible way to think about emotions is to consider them strictly as theoretical constructs.

The theory of emotion evolved by Doctor Plutchik draws on some ideas generated in ethology and animal behavior studies, notably those of the biologist, J. P. Scott. His years of observation led Scott to the conclusion that a small handful of general classifications could cover the myriad behaviors displayed by the different animals he worked with. For example, all animals engage in food ingestion, in sexual activities, in flight behavior. Indeed, because these behaviors are displayed by species at every phylogenetic level, they may be considered prototypic behaviors.

Doctor Plutchik reasoned that prototypic patterns of behavior may be thought of as adaptive reactions. Thus flight or withdrawal may serve to protect a spider or a dog or a man from danger; aggressive action toward a barrier to food may be necessary to preserve the life of spider, dog, or man. He has theorized that there are eight such adaptive patterns of behavior in four bipolar sets. These are: destruction versus protection, that is, the action of *moving toward* versus the action of *moving away from;* incorporation versus rejection, the act of *taking in* as opposed to that of *expelling;* reproduction versus deprivation is thought of as the action of *possessing* versus the action of *losing;* and exploration versus orientation is *moving* as opposed to *stopping.* The whole organism is involved in these reaction patterns, which can be used to classify the total range of behaviors.

In Doctor Plutchik's theory of emotion, the eight patterns are defined as the primary emotions. "All emotions are combinations of these few primary ones," he has noted, "just as all colors are mixtures of a few primary colors." Conflict arises and an inhibition of action may result if a mixture is composed of two or more opposing patterns of approximately equal strength.

One of the most notable accomplishments of the theory is that it provides a conceptual channel to link the three mainstreams of thought concerning the psychology of emotion. They are the behavioral, originating in Darwin's attempt to understand the overt expression of emotion in animals; the physiological, stemming from William James' concern with feeling states and their relation to visceral phenomena; and Freud's psychoanalytic conception of human emotions as "archaic discharge syndromes." This theory of primary emotions is generic in its ideas and phrased in objective terms. Depending on the organism under study, the reaction patterns can be seen to include aspects of behavior, of physiology, and of introspection. Dr. Plutchik has suggested that the words we use to describe our feelings cover only one aspect, the introspective, of the prototypic patterns. Moreover, these words convey some sense of the varying intensity of feeling; thus, the introspective dimension of the protection pattern could be expressed as "apprehension" when the feeling is relatively weak, as "fear" if it is stronger, and as "terror" when it is at a high pitch of intensity.

One interesting ramification of this theory concerns the relation between primary emotions and personality traits. When clinical psychologists judged the effects of mixing various pairs of primary emotions, they called such mixtures pride, love, curiosity, anxiety, envy, and so on, using terms that were as suitable for naming personality traits as they were for naming emotional states. To Doctor Plutchik this suggested "that the formation of personality traits is related to the development of mixed emotions, and, since mixed emotions imply some degree of conflict, then all personality traits imply emotional components in greater or lesser conflict."

This idea relating personality traits to primary emotions was the basis for the development of a new test of personality, the Emotions Profile Index or EPI. The EPI was constructed in several steps. First, 12 terms were chosen to represent the full range of personality traits that have been identified by investigators in personality research. The 12 included terms such as affectionate, sullen, impulsive, shy, etc. Then a group of judges was asked to relate the trait terms to the eight primary emotions. Finally, the terms were paired in every possible combination, which produced a total of 66 paired items. These items constitute the EPI.

A person taking the test is instructed to check the one word in each pair that better describes him at that moment. To keep self-censoring at a minimum, the words in many pairs were matched so as to be equally desirable or undesirable socially. He is "forced" to choose between them by the conditions of the test and the presumption is that his true feelings, even if they are unconscious to him, will dictate his choice. The choices he makes may then be translated from the trait terms into the model and language of primary emotions theory.

The EPI's validity was tested by giving it to three groups of women. One group was psychiatrically normal; the second included women considered moderately maladjusted patients, and those of the third group were severely disturbed patients, in a State mental hospital. The groups were matched for age, intelligence ratings, and socioeconomic status. The question was, could the EPI meaningfully differentiate among the groups? The new test succeeded quite well, in fact, in demonstrating pronounced emotional differences between normal women and those who were disturbed. As a group the disturbed women scored much higher in the protection dimension ("anxiety") than did the normal group. It was also revealing that the disturbed groups showed many more instances of high scores on opposing dimensions, which would indicate te existence of considerable conflict.

The EPI has by now proved itself to be a useful instrument in diagnostic work and in drug research. As noted above, the Columbia investigators employ the EPI as one of their measures of clinical state. In a recent study, however, they used the test in a novel way in order to shed light on some of the basic propositions underlying study methods and research thinking about manic-depressive illness.

First, 12 members of the research staff completed the EPI twice; the first time they checked items they thought applied to a patient in depression and, on the second occasion, they checked items that would be appropriate to a manic patient. In other words, they drew upon their notions of the model depressed and manic patient. The results of this exercise showed that individual members of the staff were in close agreement with one another about what emotions they believed to be associated with these diagnostic constructs. Moreover, the terms the staff thought most appropriate to mania—impulsive, adventurous, sociable—were considered by them to be least applicable to depression.

The investigators then took a batch of weekly EPI scores that had been obtained from a group of depressed patients and a second batch of scores obtained from these same patients when they were in a manic state. Mean scores were calculated for each condition. Now the researchers compared the depressed patients' mean EPI score with the mean EPI depression score obtained from the staff. The two were in good agreement, that is, the staff's idea of depression corresponded well with the patients' actual experience as they had recorded it in EPI items. With regard to mania, however, staff and patients disagreed markedly.

Patients in a state of mania considered themselves to be sociable, trusting, not at all aggressive—on the whole, generally pleasant and agreeable people. The staff, however, thought the manic patients would regard themselves as only moderately sociable and quite aggressive and rejecting. The staff also thought the patients experienced almost a total absence of cautiousness or fear, while the patients themselves expressed a moderate degree of cautiousness and only a moderate degree of impulsiveness.

These results were not really surprising. Clinicians are quite familiar with the manic's denial of illness, his insistence that he is just fine, never better. But, is the manic truly incapable of judging his feelings and behavior accurately—that is, seeing them as antisocial and destructive—or is he consciously distorting them? No one knows the answer, but the Columbia workers think that such a distinction may have relevance to the choice of therapeutic approach made to the manic patient.

The comparison between patients' experiences and staff's conception of these experiences also revealed that, while patients' EPI scores showed considerable variability, the images of manic and depressive illness held by individual staff members were rather uniform. Those who work with patients, in other words, held a stereotypic view of what patients must be feeling. To some extent this may have been a consequence of the fact that the staff had been trained in the same procedures and had absorbed the same ideas and conceptions about affective disorder. Each staff member was thinking about some hypothetical, "typical" manic or depressed patient when he filled in the EPI. Nevertheless, the finding underscores the necessity for employing objective measures as far as possible in clinical evaluation in addition to subjective measures such as those described earlier and for minimizing the risk of stereotypic thinking by assessing the behavior of individual patients in several dimensions.

Finally, some time later, the researchers obtained EPI scores from the same patients when they were well and in an interval period between mood extremes. These former patients were asked to complete the EPI on the basis of their recollections of how they felt when manic or depressed. Mean scores here showed good agreement with those of the staff. This was true for both depression and mania. Further, a patient's remembrance of depression past corresponded closely to his expression of the mood while he was actually experiencing it. His remembrance of mania, however, differed from what he had said he felt when he was actually manic. The investigators inferred from this that depression was reported accurately and mania was not.

Lithium Treatment of Affective Disorders

The ability to treat mood disorders with drugs is a recent development in medicine. The antidepressant actions of drugs used to treat depression today—tricyclic compounds and MAO inhibitors—were discovered little more than a decade ago. Scores of controlled clinical studies have repeatedly established the efficacy of these drugs, although they are no panacea; they take time to work (it is usually 2 to 3 weeks before their antidepressant actions take effect) and they do not work at all for a substantial number of depressed patients. Nevertheless, these compounds do help many acutely depressed patients for whom the only other alternative somatic treatment would be electroshock therapy.

Before the discovery of the phenothiazine compounds, whose antipsychotic actions were described in the early 1950's, clinicians also relied on ECT to abolish, at least temporarily, the hyperactivity and hyperexcitability of acute mania. Sedative drugs and barbiturates were used, too; but even in very high doses these drugs suppressed symptoms only partially. The effects of the phenothiazines, and of related neuroleptic compounds, are qualitatively different. Manic symptoms c completely controlled by neuroleptic drugs in certain cases; if doses are needed to quell the mania, however, the drug makes the patient act unnaturally subdued and passive. Thus, although there are certain drawbacks, the neuroleptic compounds are of help in managing the manic patient.

Concomitant with the discovery of the phenothiazines, an altogether different kind of psychoactive agent—lithium—was found to be highly specific for the treatment of acute mania. Within a few days after he begins to take lithium salts, the acutely manic patient is restored to a normal mood, with none of the sluggishness and torpor that accompanies phenothiazine treatment. Moreover, it has been shown that people susceptible to recurrent attacks of mania can be protected from these episodes if they take daily maintenance doses of lithium salts.

The first clinical evidence for the efficacy of lithium salts in the treatment of mania was reported in 1949 by the Australian researcher, Dr. John F. J. Cade. Within a few years a number of investigators in Australia and Europe had confirmed and extended Doctor Cade's findings. In the United States, however, most researchers were chary of seeing for themselves what lithium might do because of the notoriety that had only recently surrounded lithium salts. It happened this way.

During the 1940's lithium salts began gaining favor as a taste substitute for ordinary table salt and they were dispensed rather freely to people who, for one reason or another, needed to eliminate salt from their diets. No one questioned the effects of indiscriminate and uncontrolled ingestion of lithium. It is, after all, a natural constituent in the tissues of plants and animals, commonly reported as existing in minute, so-called trace amounts. Then in 1948 a few reports appeared in the medical literature describing cases of lithium poisoning among people taking lithium salts in their food. Physicians were quick to take note and these nonprescription lithium salt preparations were quickly withdrawn from the market (all but one which, unaccountably, is still available). Lithium came under a cloud of ill repute. This was the situation, then, when reports of lithium's clinical efficacy in psychiatry reached the United States.

The Australian and European researchers who pioneered lithium treatment of manic patients were not, of course, unaware of the potential toxicity of the lithium ion. They used it very conservatively at first and gradually worked out the means for establishing dosages that were both safe and effective. Lithium taken into the body in sufficient quantity begins to accumulate in various tissues. The key to safe, effective dosage was found to be the lithium level in blood, which is expressed in milliequivalents per liter (mEq/L.). If an individual ingests too much lithium, incipient toxicity is signaled by the appearance of a series of very characteristic side effects. The lithium may then simply be halted and the side effects as well as the intoxication invariably clear up. Thus, a great deal of clincial experience showed that lithium was quite safe to use so long as the clinician stayed alert to any side effects and regularly monitored blood levels.

The first medical scientists in this country to study lithium in careful, controlled trials were Dr. Fieve and his associates, Dr. Ralph Wharton, the late Dr. Heinrich Waelsch, and Dr. Lawrence Kolb, Director of the New York State Psychiatric Institute. These researchers began using lithium salts to treat manic patients in 1958. At a meeting of the American Psychiatric Association in 1966, Drs. Wharton and Fieve reported the findings of their study of lithium's clinical efficacy.

Nineteen patients suffering manic-depressive psychosis, manic type, were admitted to the study. All had a history of manic attacks and none of those earlier episodes had been controlled by massive doses of phenothiazine medication. Each was given placebo for the first 10 days following admission (there was one spontaneous remission during this period). A medical examination and base line measures of behavior were also made at this time. Then lithium carbonate was begun at "therapeutic" dose levels, that is, levels sufficient to attain a blood level of lithium ion of 1 to 2 mEq/L. After 2 weeks, dosages were adjusted so that a "maintenance" level of lithium was attained in each patient, ranging between 0.5 and 1 mEq/L. Blood levels were monitored twice weekly and each patient's clinical state was evaluated weekly.

The criterion of drug efficacy that the researchers used was whether the treatment shortened the duration of the manic episode. They looked particularly for changes in mood, motor activity, and speech. If the treatment succeeded in dissipating the maniacal symptoms in these key parameters, then the investigators considered the manic attack itself to have been aborted. This response occurred in 11 of the 25 lithium trials: the duration of the lithium-treated episode was substantially shorter than the earlier attacks had been. An additional six trials were considered equivocal—in spite of the patients' strikingly good response to lithium—because not enough was known about the course of earlier manic episodes. Three trials yielded inadequate results and five were judged poor. In sum, then, lithium decisively abolished mania in 44 percent of the patients; if the responses of patients in the equivocal group are considered, lithium was highly effective in 68 percent of these acutely manic patients who had been refractory to phenothiazine medication.

Publication of the Columbia study contributed to a resurgence of interest in the lithium ion among U.S. clinicians and researchers.[1]

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[1] The Food and Drug Administration today classifies lithium salts as an investigational drug for psychiatric use. This means that physicians who wish to use it for psychiatric conditions should request permission from the FDA. At least two U.S. pharmaceutical firms are interested in marketing the compound

Here was a drug that acted quite effectively against manic illness, and as such it represented a valuable new alternative treatment that a clinician might use to combat this serious mental disorder. Moreover, this drug was unique among psychopharmaceuticals: A simple ion with one positive charge, a natural constituent of the biosphere, lithium salts represented a complete departure chemically from the other compounds that have been used with some success in the treatment of affective illness. As such, lithium has greatly intrigued the researchers who are interested in the biological basis of manic-depressive illness. For them lithium has become an important new research tool for exploring the metabolic conditions underlying affective illness. Doctor Fieve and his colleagues have undertaken a number of studies to determine lithium's effectiveness on electrolyte and water metabolism, or hormones, catecholamines, and cell membranes. These are described below. They have continued at the same time to study other aspects of lithium's clinical usefulness.

In addition to lithium's effectiveness in abolishing mania, some investigators have suggested that lithium may possess antidepressant properties as well. Further, there is some evidence that if lithium salts are taken daily, on a maintenance basis, a susceptible individual can be protected from recurrences of affective illness—from swinging into either mania or depression. The Columbia researchers have explored both these possibilities. The results of their two clinical studies, carried out concurrently over the past 3 years, were reported recently by Doctors Fieve, Platman, and Plutchik.

To study the antidepressant properties imputed to lithium, the investigators selected patients diagnosed as victims of chronic recurrent affective disorder. This was operationally defined by the researchers as a history of at least two affective episodes during the preceding year or one episode a year during two consecutive years prior to the study. Patients were admitted to this phase of the study when they were actively depressed, at which time they entered the metabolic ward. The same diagnostic criterion was applied in the selection of patients for the study of lithium's putative prophylactic properties. For this phase of the study, however, patients were seen when they were in an interval phase of their illness or in a hypomanic mood; thereafter they were treated as outpatients.

Lithium in Acute Depression

The behavior of 29 depressed patients was under close observation beginning from their first hours on the ward. Four measures were considered in the final evaluation of a patient's response to treatment. It

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for treatment of manic-depressive illness and are currently carrying out certain studies required by the FDA before an investigational drug can be made available as a standard prescription drug.

should be noted first that mean scores on none of these showed any change in depression during the initial 2 to 4 weeks following admission, the period during which each patient received placebo. This fact strongly indicates that the illness of these patients would not yield to placebo effects—the sometimes potent effects induced by the simple act of taking a pill given by a doctor—nor to entry into a setting of special care-taking attention. Thus, any change in mood that occurred when active medication was given could be attributed to the drug with a fair degree of confidence.

After the placebo period a patient was begun on a 3-week course of either lithium or imipramine, a standard antidepressant drug. Neither patients nor staff knew who was getting which drug. The question was, how does lithium compare with imipramine, a proven antidepressant, in countering a mood of severe depression?

After 3 weeks of treatment, the depressive illness of all the patients taking lithium was found to have improved slightly. Lithium's antidepressant activities, however, were seen to be consistently less than imipramine's. For example, on three of the four measures, the mean depression score decreased by one-third for the lithium-treated group and by almost 60 percent for the imipramine group.

The investigators concluded that lithium possesses weak anti-depressant properties compared to imipramine's moderate-to-strong antidepressant action.

Lithium as a Prophylactic Drug

At the time results were reported, 43 patients had been in the study at least 20 weeks. They had been continuously treated with lithium, imipramine, or placebo. Some patients had been in more than one of these treatment conditions, so that there were more than 43 drug trials in total. This was a single-blind study; that is, the staff knew, but the patients did not, who was getting what treatment. The main question was, how does lithium compare with the other two treatments in preventing recurrences of depressive illness?

To judge whether a treatment succeeded or failed to protect a patient, the researchers devised a criterion that employed all of their measures of clinical state. They calculated the mean score and the standard deviation for each of the four measures that had been made throughout the course of a patient's participation (an average of 19 outpatient clinic visits, and thus, 19 scoring occasions, for each patient). When on any single visit the scores on two or more of these measures were more than one standard deviation from their own means, the occurrence was defined as evidence for treatment failure. The investigators felt that this definition of failure sidestepped the uncertainties involved in using rehospitalization as a criterion and those inherent in using the ratings on any single test or self-rating scale. By the criterion employed, failures occurred in all treatment conditions. The preliminary results which required interpretation were as follows:

1. Prophylactic treatment with lithium salts was associated with the lowest rate of failure. The rates associated with imipramine and placebo were higher and, interestingly, did not differ much from one another. (The interpretation of these findings, however, revealed a rather different picture from that suggested at first glance; see below.)

2. When mean depression scores on all four measures were compared, the imipramine group was found to be higher than the lithium group. This relatively poor showing for imipramine may have resulted, the investigators suggested, from the fact that, for ethical reasons, patients assigned to one or the other drug were not selected initially on a purely random basis. The histories of the imipramine-treated patients showed that they had undergone three depressions—compared to two depressions for lithium-treated patients—during the 2 years prior to their entry into the study. Thus it seems possible that imipramine-treated patients were more prone to depression than were patients treated with lithium. (On the other hand, the lithium-treated patients had experienced a mean number of 1.7 manic attacks—compared to 1 for imipramine-treated patients—during the 2 years preceding their entry into the study.)

3. One small subgroup of patients had been treated with both imipramine and lithium at different times, and this fortuitous situation provided an opportunity to compare drug actions in the same patients. The investigators found that when continuously on imipramine the patients of this subgroup were less depressed than when they were on maintenance lithium.

4. The investigators checked to see whether any difference existed between a group of patients who had been on lithium for less than 7 months and a second group who had been on the medication longer than 7 months. They saw no difference in the frequency of failures, but they did find that patients on lithium for the longer period had lower mean depression scores than had those on lithium for the shorter timespan. Further examination of these subgroups, however, showed that biases may have been operating in the assignment of patients in the different groups.

From these various clinical data, then, the investigators drew the following tentative conclusions about maintenance lithium as a prophylactic treatment in manic-depressive illness.

Maintenance lithium therapy may reduce the intensity of recurring depressive episodes in the susceptible patient over time, but it does not alter the frequency with which the episodes recur. The researchers suggested that their own heightened sensitivity to incipient affective swings may have been instrumental in the final results. Thus, whenever the investigators recognized the signs of impending depression or mania in one of their patients, they were quick to alter dosages or change medication in an attempt to abort the mood change. "It is a fact," they noted, "that early monitoring and adjusted treatment of the subpsychotic shifts (with lithium and/or antidepressants) tend to reduce the duration and frequency of potential manic-depressive episodes."

Maintenance lithium therapy does not exert prophylactic effects on recurring depression *per se*. Rather, they concluded, "lithium acts directly as a mild antidepressant agent for each recurrent depressive attack, and as a strong antimanic agent for each recurrent manic attack."

In sum, in the opinion of these workers, the overall effect of maintenance lithium treatment is a substantial leveling of the high, manic states but only a partial boosting of the low, depressed periods. The most judicious treatment for many patients who suffer frequent mood swings, the researchers suggested, might be maintenance lithium therapy in combination with periodic use of antidepressant agents.

Biological Bases of Mood Disorders

In recent months the Columbia group has focused its studies on the biological concomitants of effective illness. By virtue of its interdisciplinary capabilities this group is able to get, simultaneously, detailed records of clinical state along with measures of a variety of biological parameters from the same patient. Nothing less than this sort of total, synchronous view of individual patients is required in any effort aimed at discovering the biologic accompaniments of disturbed emotional states. Ultimately such research seeks to uncover the extent to which these accompaniments may be artifacts of illness—as fever is an artifact of infection—and to what extent they may contribute to the origin of illness.

The Columbia team is one of a number of research groups engaged in this new cross-disciplinary field of study, called biological psychiatry. Some promising leads have been emerging from this research. In three areas particularly—electrolyte and water balance, hormone levels and gland functioning, and catecholamine metabolism—there is evidence linking altered biological functioning to mood disorders. Doctor Fieve and his associates have been especially interested in studying the effects of lithium in these areas.

Sodium, Potassium, and Water Balance

A few researchers have reported abnormalities of water and electrolyte metabolism, notably sodium, in patients suffering with mania and depression. The activities of the lithium ion in the human body are of great interest in this context because lithium closely resembles sodium and potassium, electrolytes known to be involved in the transmission of nerve impulses. As noted earlier, the Columbia scientists have now begun major studies on this problem in cooperation with investigators from St. Luke's and Presbyterian Hospitals.

Patients who participate as subjects in this work are held under strict dietary controls while the investigators measure such parameters as total body water and extracellular fluid volume, follow the movements of sodium, potassium, and other ions among the various functional pools of the body, and check for any changes in external balance that may occur with lithium therapy. Metabolic balance studies make extremely rigorous demands on a research facility and its staff. No more than three subjects can be studied at a time by the Columbia workers, and each subject must remain in the study for at least 3 to 4 weeks. Every completed individual record has required a substantial expenditure of time, cost, and skill. There is no shortcut method for gathering this basic metabolic data, and no other sort of data will provide the information needed to answer the questions posed. The facilities at Columbia are among the very few in the country in which such investigations may be carried out.

A related issue is the handling of lithium ion itself. More than a dozen years ago an Australian group reported significant differences in the way ingested lithium was handled by normal subjects and acutely manic patients. Manic patients were able to tolerate far higher doses of lithium than normal subjects could take without getting ill from toxicity. Moreover, so long as they were actively manic, patients appeared to retain much more ingested lithium than did normals. Once the mania broke, however, patients excreted massive quantities of the accumulated lithium and, at that point, could no longer tolerate large doses. These observations raised the possibility that the presence of acute mania—that is, the presence of some unknown metabolic aberrations that were characteristic of the illness—could be a decisive factor in the way lithium ion was metabolized in the body. Other workers have since explored this possibility; their results vary and the question is still unresolved.

The Columbia researchers feel that the most reasonable explanation for a retention-excretion difference between normal and manic individuals can be found in two nonorganic features of mania. First, they point out, it is difficult to be sure one is getting complete 24-hour urines from a manic patient who is, typically, extremely uncooperative. Thus, an unknowable amount of lithium could easily be excreted in urine that is lost to control measurements. The second factor concerns the amount of ordinary table salt consumed. Under Doctor Platman's direction the investigators demonstrated that, when fluid and salt intake were held constant for a group of patients, lithium was retained if salt intake was low; but, if salt was added to the diet, excretion increased markedly. Given this relationship between lithium accumulation and salt intake, Doctor Platman reasoned that the erratic eating habits of the acutely manic patient—who is often too excited to eat—could result in an abnormally low salt intake and, consequently, in a tendency to retain ingested lithium.

The metabolism of lithium ion continues to be a major focus of the current research at Columbia. Dr. Leslie Baer, who is closely involved in this aspect of the work, said that factors thought to be implicated in the retention, excretion, and toxicity of lithium are now under study. These include the secretion of aldosterone—a hormone of the adrenal cortex that regulates the metabolism of a variety of mineral ions in the body—and certain aspects of kidney function, notably, glomerular filtration rate and the secretion of renin, a kidney enzyme that ultimately affects both aldosterone and electrolyte levels. In related work, the changes induced by lithium ingestion in the levels of sodium and potassium in rat brain are also being investigated.

Hormones and Gland Functioning

Adrenal cortex.—Elevated levels of adrenocortical hormones—for example, cortisol—have been associated with severely depressed states by a number of researchers. In most cases these levels are not definitely abnormal, but lie at the upper end of the range of normal values. Even so, it has been suggested that these consistently high levels might be reflections of abnormal adrenal functioning. (The adrenocortical functioning of manic patients, on the other hand, has not been studied as often and the findings reported do not agree with one another.) Further, some researchers have suggested that the diurnal pattern of adrenocortical secretion—normally lower in the late evening hours than it is the following morning—may be awry in depressed patients. The Columbia investigators have looked into these suspected associations between mood disorder and adrenal activity.

Doctors Platman and Fieve recently concluded a study of cortisol levels in blood in a group of manic and depressed patients. They found, first, that the levels associated with mania were fully as high as those found in depression and, second, that these levels dropped on recovery in both conditions, that is, when patients recovered from either mania or depression. Moreover, although they did not see an abnormal pattern of cortisol levels in two depressed patients they studied, they did find evidence for this in some of the manic patients. Three of seven determinations made on blood taken at midnight were higher than those made the next morning at 8 AM; on recovery, however, the normal diurnal pattern reappeared in these patients.

Doctor Platman then went on to demonstrate that an injection of dexamethasone, a synthetic corticosteroid, suppressed the secretion of cortisol, the natural corticosteroid, in five depressed patients. This indicated that adrenal functioning *per se* was not abnormal—at least it was not unresponsive to the feedback mechanisms that normally regulate output on the basis of the level of circulating corticosteroid.

Finally, Doctors Platman and Fieve looked at the effect of lithium carbonate therapy on cortisol levels. They made a rather puzzling observation. Lithium treatment was associated with a rise in cortisol levels that persisted as long as 3 weeks; at the same time, most patients improved clinically. The observation casts doubt on the postulated relationship between high and rising corticosteroid levels and high intensity of mood disorder. As for the question of lithium's influence on cortisol secretion, the investigators offered several possibilities for a mechanism of lithium action that might produce the effects they saw. They concluded, however, that it was not possible to explain the findings satisfactorily without further study.

Thyroid.—Recently Doctors Fieve and Platman have reported some findings about lithium and thyroid functioning that may lead to valuable new insights into the biologic conditions underlying manic-depressive illness. In this instance, the impetus to look into thyroid functioning sprang directly from the researchers' clinical experience with lithium.

Some time ago the investigators discovered that one of their patients, a man who had been on maintenance lithium for 13 months, had developed a goiter. An earlier report by Dr. Mogens Schou, the Danish psychiatrist who is the most experienced lithium researcher in the world, described the development of diffuse, nontoxic goiters in a small number of patients on maintenance lithium therapy; Doctor Schou raised the possibility that continuous lithium treatment may have caused the goiter development through unknown mechanisms. The discovery of goiter development in one of their own patients prompted Doctors Fieve and Platman to investigate the question systematically.

They selected 30 patients from the total population of those under treatment with lithium at Columbia. The patients who were asked to participate in the thyroid study had been taking lithium for periods ranging from 4 months to just over 2 years; none had a history of thyroid abnormality. The first 19 patients to accept the invitation composed the final study group. Each was put through a variety of tests and procedures designed to reveal the structure and functioning of the thyroid gland.

The investigators found that only nine of these patients had structurally normal glands. Of the remainder, six definitely had goiters, one patient had a moderately enlarged thyroid, and three showed so-called cold nodules. There were no associations apparent between the existence of these defects and either the length of time lithium had been taken or the dosages used. Nevertheless, the researchers commented, "it is difficult to consider the high incidence of thyroid pathology in our sample as coincidental."

Two important developments have followed as a result of this study. The first concerns the treatment of manic-depressive patients with lithium therapy; and the second involves checking on possible links among thyroid functioning, lithium treatment, and manic-depressive illness.

Depending on the results of their continuing controlled studies, the researchers are now asking whether patients who require lithium therapy ought to have thyroid function tests before drug treatment begins and regular tests thereafter to determine if iodine or thyroid hormone should be administered. If such precautions prove to be advisable, they noted, "a goiter could be detected, treated, and followed closely as an incidental and clinically manageable side effect of lithium treatment."

The investigators themselves are now following this procedure in one of two studies through which they hope to clarify whether any associations exist between thyroid functioning and lithium treatment, and/or between thyroid functioning and manic-depressive illness. They are measuring patients' thyroid functioning before lithium therapy begins and at intervals afterwards, while patients are taking maintenance lithium doses. In the second study, they are examining thyroid function in manic-depressive patients who are under treatment with imipramine. This work eventually may shed light on lithium's mechanism of action, which is now unknown, and, ultimately, on the role of the thyroid gland in manic-depressive illness.

Catecholamines

"Catecholamine" is the chemically descriptive name given to a group of important molecules in the body. One of these, norepinephrine, is known to be the key molecule in the transmission of nerve impulses in a branch of the peripheral nervous system. Norepinephrine is also abundant in certain regions of man's brain, regions in which the emotions are thought to center. (It is suspected, but not yet established, that norepinephrine also functions as a neurotransmitter in these brain areas.) Despite many open questions about norepinephrine's metabolism and function in man's brain, there is a significant body of data suggesting that this amine is critically involved in the regulation of mood. A hypothesis about the biologic basis of mood disorder has evolved from this data. The hypothesis is that endogenous depression is associated with a shortage of norepinephrine at critical brain receptor sites; conversely, a superfluity of norepinephrine may be associated with mania.

Some of the most telling evidence in favor of this hypothesis comes from studies of the effects of antidepressant and antimanic drugs in animal brain. Antidepressants were found to increase, and lithium salts effectively to decrease, the amount of norepinephrine available to the critical receptor sites. It should be noted, however, that these drugs produce many other biochemical effects as well, and their influence on norepinephrine is not considered to be their decisive mode of action.

A few years ago Doctor Fieve joined with Doctors Stern, Neff, and Costa in a study of lithium effects on catecholamines in rat tissues. They injected the animals with enough lithium to achieve a blood level comparable to the level maintained for therapeutic effects in patients. Then the animals were killed and their brains and hearts removed for norepinephrine analysis. The researchers found a 100 percent increase in the turnover of norepinephrine in brain and a slight, nonsignificant increase in the heart. This differential action may be due to the higher tissue levels of lithium found in the brain. Increased turnover would appear to be incompatible with reduced availability, but the relation between these two aspects of norepinephrine metabolism is not definitely known. Consequently, the investigators felt that the data obtained from their study could not help answer the question of lithium's effect on norepinephrine availability in brain.

The Columbia investigators are continuing to explore questions about the role of brain catecholamines in mood disorders, and to study a whole range of problems involving the biological bases of mania and depression. Because lithium salts are the best antimanic agent in use today and the most specific psychotropic medication known, lithium will remain the single most important drug in the research program. Today the Columbia investigators have more than 150 outpatients on maintenance lithium therapy. All of these manic-depressive patients are being closely controlled and followed; they constitute the largest research sample of manic-depressives in the United States. The extensive and continuing clinical experience with lithium and the comprehensive program of basic research to make the Columbia program an important center of lithium research in the United States today.

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ALTERNATIVES TO VIOLENCE

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The unruly issues of riots, slums, and racial problems are now of major importance. Our state of information is extremely limited, and major decisions are often made on the basis of scant knowledge. Saul Bernstein, a professor of social group work at Boston University, has completed two extensive interview studies to explore these and related issues. His focus has been on our most alienated young people, those who are minority group members and who are living in slums. Initially interested in delinquency and its contemporary forms, he then turned to the impact of the explosive events of the 1960's.

Twice in the mid-1960's Professor Bernstein traveled to nine major American cities to talk to people working closely with teenagers in the ghettos, as well as with some of the youngsters themselves. In the first study, completed in 1963,[1] he found that many of the young people in this country live in terrible housing in slums, are blocked educationally, cannot get jobs, are undermined by family problems, and are caught up in destructive cycles with new babies being born into new one-parent families. Many of these young people are bitter and intensely cynical, and feel hostile and destructive towards this country. Many engage in delinquent acts and are in trouble with the police. These young people do not feel encouraged by the new legislative landmarks which are designed to secure their rights. If anything, many felt more impatient and intolerant of existing inequities than ever before. Many felt that this country had let them down. Mr. Bernstein concluded that many agencies working in the slums were doing good work but against great obstacles, and he especially singles out the street workers as of great importance in reaching these alienated young people.

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In the mid-1960's this country was torn by riots and stunned particularly by the Watts riot. Many people were puzzled and shocked because progress had been made in civil rights legislation and the antipoverty program had begun. The civil rights movement at that time was also strong and tasting the fruits of success. It was at this time that the second study was planned to determine if any of the socially approved forces had touched the alienated youth with the same force as had the riots. An exploration of the role of these young people in the riots was also planned.

During both studies the investigator visited Boston, Chicago, Cleveland, Detroit, Los Angeles, New York, Philadelphia, and Washington, D.C. The second study done in 1965–66 substituted Rochester, N.Y., for San Francisco. At that time Rochester had had riots and San Francisco had not. The design in both studies called for the location of major social agencies working with young people in the slums, and to interview staff in each of these agencies. In addition to interviews with staff, the young people themselves were interviewed whenever possible. In some cases, staff members were themselves indigenous workers and very representative of the ghetto population. In both studies, the cities were selected because they had large numbers of hostile, alienated young people and because agencies in these cities had long experience in work with young people. The focus was on the poor, including members of minority groups: Negroes, Mexican-Americans, Puerto Ricans, and on poor whites.

In the study done in 1965–66, the investigator visited nine cities. He held interviews with 289 people. Most of those interviewed were staff members at various levels of responsibility in agencies active in slum areas. In most cities there were interviews with officials of the Human Relations Commission or its local equivalent. Police, particularly those dealing with juveniles, were included. Educators were seen. Staff members of various poverty programs and of community planning councils were included. Representatives of such Federal agencies as the Office of Juvenile Delinquency and Youth Development, and various research groups, were interviewed. Experimental agencies, such as Mobilization for Youth and Haryou-Act in New York, and the Cleveland Community Action for Youth, were included, as were new training programs such as Manpower in Rochester. Limited time of the second study and the inaccessibility of the young people themselves prevented more than a small number of interviews with really alienated young people themselves. A number of representatives of militant groups, such as Saul Alinsky's Industrial Areas Foundation, were interviewed. All interviews took place between December 1965 and June 1966. In many cases group interviews were held.

This technique resulted in a broad and detailed series of observations of experts and young people about some of the major events of the mid-1960's. While events have been occurring at rapid speed in this area, this study provides a valuable cross section of opinion at that time. The investigator acknowledges that the research is limited by several factors. Obviously, not all alienated youth come into contact with such agencies and the experts interviewed may have some biases. The study is treated as documentary rather than as "hard" research.

The major question of the study was to find if we as a society had found any way other than riots to touch the alienated young person and help him change his status. There is also great concern about the role of the ghetto youth in these massive riots. Although many things have occurred to correct injustices and open up opportunities, it is still questionable if they have made sufficient impact. The study was designed to increase our information about how these young people feel about riots, about legislative landmarks, protest marches, desegregated schools, "Black" schools, etc.

The first study (in 1963) showed that there are many people caught in our slums in very destructive patterns. Some changes in patterns of delinquent gangs have occurred. The highly structured large gangs appear to have diminished, although not to have disappeared. Smaller groups referred to as clusters tend to predominate now. Although it may be reassuring to see the disappearance of the highly visible signs of gangs, such as matching leather jackets or gang graffiti on walls, this may be due to the accumulated pressure brought to bear on visible gangs, rather than to their lack of strength. The gangs may have "learned the game." Although rumbles on a large scale have decreased, "snagging" or "Japping" was commonly mentioned. In this form of fighting, a lookout watches the regular movements of one or two members of an antagonistic gang. When it is established that a suitable place will be passed by the victim at a predictable time, about six of the aggressors go home, wash, shave, put on good suits, and then saunter towards that spot. They are careful to go in pairs and not to show in any way by their behavior what is planned. When the victim comes along, they give him a bad beating and then go casually home to change clothes. In some places the ritual was different so as not to risk their good clothes. Clothing is very important in the gang psychology. Another form of gang fighting mentioned is the "fair one." Here a representative of each group fights without weapons or assistance. This, however, calls for a high level of discipline which is rarely achieved. This is relatively infrequent as the fighters are in a very tense, public, and vulnerable position as well.

Most of the aggressive incidents occur between groups with the same ethnic or racial background, although in some places even the most confined ghetto population is quite mobile and there are some incidents where groups have traveled to other areas for conflict.

The study revealed that although these bitter, hostile young people would seem ripe recruits for militant or protest groups that relatively few had joined. The Black Muslims, for example, had little to offer in terms of meeting concrete needs, such as jobs. The NAACP methods often seem too slow and removed to be attractive to these young people. However, some young people, generally the less hostile ones, have joined NAACP. In Boston it was reported that a small number of white gang members were recruited by the American Nazi Party.

The first study also examined the role of the "street worker." Agencies in slum areas have found that "detached" workers can move into the environment of the young people and reach them in a way no office-bound worker could do. They provide a link between agencies and some young people who have lost contact with all legitimate agencies or social groups. Street workers vary; some have master's degrees, some have not yet finished high school. Most have undergraduate degrees. Some have delinquent or prison backgrounds and some are from very stable middle-class backgrounds. As a group they tend to be very active and not attracted by a 9 to 5 life. Most are deeply involved in helping people find themselves and achieve some success. They tend to be not well accepted into any one professional group. They are "lonely" professionals. Agencies have a hard time retaining street workers, and the demands of the job are very grueling, so most workers tend to be in their twenties or thirties. Job opportunity tends to be limited in terms of opportunity for advancement and increased income. These issues are important as more and more innovative agencies designed to serve the ghetto population depend heavily upon the services of the street worker. Social work is considered the nearest profession. Mr. Bernstein comments that street work, which has been estimated to cost about $200 to $600 annually for each youngster, is little enough to pay for work which genuinely reaches them and often their families.

After examining patterns and services and the state of some very alienated young people in the first study, the investigator turned to what was happening and what alternatives there might be to the violence occurring in our cities. An early task was the division of the various riots and incidents into broad categories. In the mid-1960's riots occurred that were the result of spontaneous events, e.g., the riot in Boston following a dance which excluded large numbers of young people who could not be accommodated. Other riots were between racial or ethnic groups, such as the incident sometimes called Watts II on March 15, 1966, between Mexican-Americans and Negroes. However, violence within the ghetto itself was the most serious and disturbing type. At that time Negroes were primarily involved, although some episodes were thought to have had their beginnings in the tensions of Puerto Ricans or Mexican-Americans. Despite much "get whitey" talk and the destruction of white-owned businesses, the aggression at the time of the study was largely confined to slum areas. White men were injured primarily as they came into the riot area in an official capacity, such as happened with police or firemen. Threats to burn and loot white areas did not materialize.

To realize the magnitude of the riots of the mid-1960's a review of the McCone Commission figures is valuable. Although Watts was the most memorable riot of that period, many others occurred. Many, many people were injured, many arrested, and some killed. To make the figures more dramatic, it must be remembered that only a small fraction of those involved were arrested or noted in official statistics. It is speculated, too, that many more who never took part still tacitly supported the rioting.

McCone Commission Report summary of riots occurring in 1964:

City	Date	Killed	Injured	Arrests	Stores Damaged
New York	July 18–23	1	144	519	541
Rochester	July 24–25	4	350	976	204
Jersey City	Aug. 2–4	0	46	52	71
Paterson	Aug. 11–13	0	8	65	20
Elizabeth	Aug. 11–13	0	6	18	17
Chicago	Aug. 16–17	0	57	80	2
Dixmoor (Phila.)	Aug. 28–30	0	341	774	225

All of these occurred between July 18 and August 30, a 6-week period. Five dead, a total of 952 injured, 2,484 arrested, and 1,080 stores damaged. Despite all this, the riot in Watts overshadowed the rest. It began on August 11, 1965, a Wednesday, and ended the following Tuesday, August 17. It was estimated that at times as many as ten thousand Negroes participated. This, however, was still only 2 percent of the population living in the riot area. The size of the riot area was an incredible 46.5 square miles. The dead totaled 34, the injured 1,032, arrests 3,952, and damage was estimated as about $40 million. Only one public building was destroyed and only 14 damaged or burned. This is an interesting issue, as these buildings, while not attractive to looters, do symbolize the dominant "establishment." Although there is always present the explanation of riots being a spontaneous mass protest where people get out of control while attempting to express a protest against degrading living conditions, this explanation fails to account for the control exhibited in some areas and the relative immunity given, for instance, to schools, normally a target for vandals. Rioters in Watts were also observed stopping at traffic lights and driving with caution. Examples were given during the study interviews of looters apologizing when bumping into each other. There was considerable evidence as well that riots may be provoked or related to specific incidents or situations rather than emerging spontaneously from the blue.

Some situations were cited as definite causes of riots. For example, Garfield Park in Chicago, a predominantly Negro area, had a fire station with an all-white staff until after the riot when it was integrated. The California vote defeating Proposition 14, an open housing ordinance, was considered an irritant in Watts. The inadequate public transportation in Los Angeles was also cited. A man looking for work in Los Angeles who lived in Watts might have to spend several hours on a bus and pay a round trip cost of almost a dollar. Budd Schulberg, who later established a Writer's Workshop in Watts, told of seeing a group on a street in Watts. A 6-month-old baby had died. The mother's grief was intensified by the bitter knowledge that the prompt arrival of an ambulance and a hospital closer than the County General might have saved her child. In April of 1966 there was still no public hospital in Watts, and Los Angeles voters later rejected a bond issue to contruct one.

Others interviewed told of comments by law enforcement officers that were irritants. Particularly cited were "abrasive" remarks by Los Angeles Police Commissioner Parker. A comment he had made in 1958, that Negroes committed 11 times the major crimes as other races, was still remembered with bitterness by Negroes in that area.

The rigidity of the Boston School Committee about *de facto* segregation was considered an outrage. Even the withholding of State funds for education, because of the unwillingness of the Boston School Committee to prepare and put into effect adequate measures for the desegregation of public schools, did not produce significant change in 1966. Elections for posts on the School Committee, which produced large votes for the most intransigent members and defeat for the ones in favor of desegregation, added to the affront to the Negroes.

Heat, "the long hot summer," adds to the tensions and problems of crowded living and may bring a state of irritability that is explosive.

Accidents can trigger incidents. A firetruck on an emergency call hit a Negro woman and killed her. Since the fire station involved was all-white and in a Negro area and already the source of tension, the rumor spread that the killing was on purpose.

The presence or absence of social controls is an important element. In Philadelphia, at the "Wall" of the Girard College, a crisis was described which was headed off on at least one occasion by the strong activity of the Human Relations Commission which marshalled clergymen, probation officers, police, street workers, and others to help keep the gang members who were gathering under control. Other types of social control are punitive and may work temporarily but appear to be self-defeating.

For instance the mayor of a riot-torn area in Illinois said he would meet with Negro ministers but not with "violators or demonstrators."

Participation in riots was justification for being sent eviction notices if participants lived in public housing. In other places parents in public housing were very concerned about involvement of their children in any kind of a protest for fear it would lead to the family being evicted. Officials of some cities had considered the legality of cutting people off public welfare or unemployment compensation. The assumption is that those who are arrested are guilty and were more active in rioting than those who were not arrested, which may not necessarily be true. These measures, such as eviction, are punishment beyond that established for criminal acts and make life worse for those affected. The accessibility of public officials to those in the ghettos is very important and can reduce the impulse to riot.

Role of the Alienated Young Person in the Riots

Those interviewed in this study described considerable activity by the young people in the ghettos. They looted, burned, and fought the police. Some were members of gangs, although a more frequent pattern was for small cliques to riot together. These were units of three to five youngsters. The older teenagers rather than the younger, and boys rather than girls, predominated. It was the general finding that these young people *did not plan* the riots. Many of the young people who took part were in their twenties or thirties. Strong feelings were expressed by ghetto youth against the middle-class Negroes who attempted to stop the riots. One group of teenagers in Rochester articulated this antagonism, claiming that middle-class Negroes thought that the white reaction to the riot would hurt them. These same young people were bitter that many better-off Negroes moved out of the bad areas and then abandoned all responsibility for them. The investigator notes that, despite the concern for the ghetto problems shown by middle-class Negroes interviewed in this study, there is great resentment towards them by those still in the ghetto.

A wide range of feelings was expressed about the riots. Some young people admitted that they enjoyed them. Others said they were dangerous and foolish. Some felt that they are essential to attract attention to the ghettos. One comment was, "It is better to spill blood in Watts than in Viet Nam." There is little doubt that riots give people in the ghetto a sense of community and power. In Los Angeles it was said that participation in the riots became a status symbol, and many felt good to have been a part of it. Many spoke of the dangers of being shot, hurt, or arrested. Young people in Boston spoke of envying Watts and yet did not speak of riots in their own area. Detroit and Washington seemed calmer than other cities, yet both had riots later. At the time of the study, the riots seemed very remote and unrelated to the Puerto Ricans and Mexican-Americans interviewed.

There is tremendous complexity in the reactions to riots. The impact of the experience itself and its realities, such as food shortage, jail, etc., bring about additional factors that become added to those present prior to the riots. The mass news media and many civic leaders add interpretations and give reasons, and these all become incorporated into the discussion. The reasons given after a riot may be quite different from the motivations of the riot period itself. Still, an overwhelming certainty was that for the people in this study the reality of the unbearable living conditions and the profound feeling of helplessness was a major factor in every riot.

Agency Activity During Riots

Street workers who had established influential relationships with young people on the streets were able to make major contributions. In Garfield Park, Chicago, the workers were able to persuade the young people they knew to leave the riot area. In other cases the street workers were able to enlist gang leaders in the effort to keep their friends out of the riot activity. Several agencies took young people away from the areas to lessen the opportunity for involvement. During the Watts riot the staff of the Special Service for Groups took food to desperate areas. Later, when it was considered unsafe for whites to enter the area, the Negro staff carried on.

All of the cities need more street workers in the rough areas. The street worker is seen by the militant Negro as a threat because of his commitment to nonviolence. Mr. Bernstein quotes a letter sent in plain envelope to three street workers at Lawndale Neighborhood Services of Chicago Youth Centers:

> "Greetings Brother:
>
> "Have you ever considered WHY the GREAT WHITE FATHER is continuing to spend MORE money on the various street work programs throughout the entire country and especially in the BLACK GHETTOS. Also why the GREAT WHITE FATHER is expanding these programs to include community organizations. If you are aware of the current struggle being waged by Black Americans to be recognized as human beings in the so-called 'land of the free and home of the brave,' it is not difficult to arrive at the most logical answer as to why WHITEY is expanding the program.
>
> "The white man wants to contain our people, to keep them from rebelling against living in slum housing, receiving poor education, and thus the worst jobs, if any at all. The people who run America do not want the Afro-American to know who he is, to have an identity, to know of his glorious past, and the prospects of an even richer future if they can get Charlie off their backs.
>
> "Today there is a fierce battle being waged for the minds of the youth of America, especially Black Youth. For young people are invariably more idealistic than older people, and thus are not

> likely to go for as much bull—as older people. Thus, it is principally the Black Youth who fought the police during the riots of last summer, age range from 14 to 19 years old.
>
> "Because Mister Charlie pays your salary the same as he pays me, ask yourself, if the real — breaks out here, what will be my ROLE? If your wife and children are in the streets during a riot, the BIG WHITE COP will *crack their heads* just like any Negro's head. MY BROTHER, what will you do with your group? Will it be a, 'cool it, baby, they ain't done nothin' to us,' or will it be a 'defend yourselves, brothers'? Things are bound to get worse all over. The War on Poverty is a farce, a throwing of crumbs to the poor, both black and white, to stem the tide of rebellion.
>
> "Every Afro-American street worker has a very important role to play in the coming days ahead. In the language of the street, you can teach the young brothers and sisters to be proud to be BLACK. You can help destroy the often subconscious inferiority complex that exists in many of our ghetto youth. BROTHER, it is a question of whether or not you will truly be a BLACK MAN who cares above all else about the hopes and aspirations of his people. The choice is yours to make and I have confidence that you will not be a SELLOUT. The fight is ours and we cannot afford to not be victorious.
>
> Your Soul Brother"

In addition to the efforts of the street workers, some agencies were able to make and keep active telephone contact with clients in the affected areas. This is an especially good technique for verifying or defusing rumors.

A common feeling among Negroes, even those who would work to prevent a riot, is that no Negro can totally regret that riots have occurred. Although many people suffer and there is a trauma involved, there are definite gains in terms of community awakening. There is heightened sensitivity on the part of police and politicians to their handling. Whites have a range of reactions from dedication, to eradicating the basic wrongs, to buying guns. Riots in some situations increased communication and in others intensified the polarization.

Participation in the Civil Rights Movement

The civil rights movement in this context is described as a broad combination of legislation, organizations, public opinion, and activities aimed to extend all civil rights to those who have been deprived of them. The means are many, including marches, demonstrations, sit-ins, boycotts, political pressure, etc. In the early 1960's many white people were involved as well as members of minority groups. At the time of the study some militant groups of Negroes had given up on the civil rights movement as an effective force. However, they must also be included here because of their actual and potential impact on alienated youth. The civil rights movement has been concerned with human rights as well as strictly civil rights and often includes a strong appeal to decency as well as to law enforcement.

Little participation in civil rights activity on the part of alienated youth was discovered by this study. One group of boys in Chicago had helped to promote a large meeting to collect food and money to be sent to Negroes who had been cut off from welfare. This had occurred when they had registered to vote in a Southern community. Some other participation took place largely through agencies. For instance, Mobilization for Youth in New York took a large number of ghetto residents to Washington for the March on Washington in 1963. By and large, participation was limited and almost accidental. If a protest march went through their neighborhood, they might join in. The young people in the civil rights movement have been those whose motivations and aspirations have been more clearly defined than those of the young people here under study. By and large, the young people who are most alienated are also bitter and less likely to participate in a civil rights movement. They are quicker to strike out, more hostile to the police, and less disciplined. Some groups would even discourage their participation so as not to jeopardize their cause or inflame a sensitive situation. The more quick-tempered prefer to work at things in a more direct way. The staff at Haryou-Act in Harlem described a group that was concerned about the lack of toilets at a playground. They then got publicity for the problem by urinating in cups at the playground. They did get the toilets. Many of the most alienated young people did not even really understand the civil rights movement. Many in the North thought it was only for "colored people in the South." The delayed results of the civil rights movement are not attractive to them. This group has had little experience with altruism and cannot believe that anyone does anything for a reason other than his own gain.

It was clear from the interviews that the nonviolent theme is not compatible with the impulses of the angry young men in the ghetto. They feel a strong need to retaliate. Although many situations have been corrected legally, the problems still exist in an extremely frustrating form. For instance, these young men know that legally many restaurants are open to them and that stores cannot refuse to serve them. They also know that they will be ill-received or self-conscious if they venture out of home territory. Their clothing or their hairdos will mark them as different. They see the stores and do not have the money to patronize them. The jobs that are available to them pay so little that often they do not materially advance their ability to have the things they so desire. They see the quick financial rewards that come from illicit operations. They resent having to "break their backs" to earn a legitimate salary and yet know that "their backs" are all they have to offer due to their poor educations.

This study showed that the civil rights movement has to a certain extent increased the awareness of the average minority group member of the discrimination that he suffers. The need for an increase in Black pride and a self-respecting racial identity is crucial. There is still the question as to whether any attempt to revive dignity can be totally successful without significant changes being made in the slums and in employment, and in general acceptance and respect on the part of the dominant community.

At the time of the study, the heroes of the civil rights movement were little known to ghetto youth. The Reverend Martin Luther King, Jr., known to everyone since his death, was relatively little known by ghetto youth in most cities, although he had been widely honored in this country and abroad. Malcolm X was an authentic object of hero worship. During the riot in Harlem in 1964, youth were quoted as chanting: "We want Malcolm X." Many knew Cassius Clay whom they admired for his boxing skill. Feelings were mixed regarding his lack of humility. In Roxbury, the Boston Celtics were highly regarded by the Negro youngsters.

The special emphasis on the concept of "Black" or "Afro-American," with its repudiation of slavery and its labels, is congenial to the most alienated persons in the ghettos. The concept of Black superiority is welcome to them. However, this study showed that, despite the compatibility of the concept, few of the young people joined the movements; most remained as isolated as before from the larger society.

Puerto Ricans and Mexican-Americans have been much less involved than Negroes in the civil rights activities. The reality of Puerto Rico as a place and the recognizable and respected culture helps them tolerate the problems here. This is true of Mexicans as well. The emergence of the new Black African countries is important but very remote to most American Negroes. While the Puerto Rican can and does return to Puerto Rico, the average American Negro does not go to Africa, and, if he does, he may feel more alienated and foreign than in the United States. Although the militants have revived or made ties to Africa, by and large the American Negro feels that, good or bad, this is his country.

Antipoverty Programs

The War on Poverty generated a great many programs to attempt to attack serious problems. Of those specifically designed to help adolescents, perhaps Job Corps and Neighborhood Youth Corps are most pertinent.

Job Corps Camps were set up away from slum areas. They offered healthy environments, good food, remedial education, and job training. This might have been beneficial for these particularly unequipped and hostile young people, except that a few things were wrong. The publicity was attractive, but the delays in processing applications caused people to become discouraged. The location of the camps away from home surroundings made some uneasy. The similarity for some youth of being sent away to training school was too marked. Agencies which did send young men had a hard time finding out what happened to them. Information was rarely sent to the referring agency when a young man dropped out or was asked to leave. So, for a variety of reasons, the Job Corps did not make a noticeable mark on alienated youth in the cities studied.

The Neighborhood Youth Corps included programs of jobs for school dropouts, special intensive summer job programs, and activities for in-school youth. Social agencies, government offices, and industry participated as work stations. Youth whose families had incomes at the poverty level were acceptable. Usually assignments were for about 20 to 24 hours a week for those who were out of school and less for those in school. The pay rate was about $1.25. A common complaint was that this rate was too low. Many participants regarded the assignment as work and not training and felt that it was not enough money. Delays in issuing checks and other such problems lowered motivation to stay on in some cases. Even the "poverty" label was offensive to some. After 6 months those out of school had to resume some type of educational program or be dropped.

The Neighborhood Youth Corps was most successful where the policy was clear and counseling was an integral part of the program. The nature of the work assigned and its potential benefit to the young person were also important. Most members valued the opportunity to use business machines and other skilled types of jobs much more than the menial jobs usually available to them.

Agencies which employed these young people found that their early employment phase was often difficult. A combination of patience, understanding, and firmness was needed to deal with absences, unexplained lateness, or early leaving. Some young people were in agencies whose staff understood the hair styles or dress of the youth and the identity issues involved, but also felt these posed a barrier to later employment. Language and attitudes about authority also caused problems. The way that each issue was handled was important in each case. The youth had to be accepted as they were at the beginning, and later the realities of the employment market were introduced.

Local programs were developed in various cities with the approval of the local antipoverty organization. Mr. Bernstein reports on a few that seemed successful or interesting.

Chicago—STREETS (Socialization, Training, Education, and Employment Technical Services)

This was a cooperative venture by the Chicago Boys' Clubs, the Chicago Youth Centers, Chicago Federation of Settlements and Neighborhood Centers, and the YMCA. The purposes in general were to enable disadvantaged youth to function better in relation to requirements of our society. Other goals were to make fuller use of social welfare and other systems, to help the youth move toward adequate education, satisfying jobs, healthy marriages, and so on. The neighborhoods selected for service were among those designated by the Chicago Committee on Urban Opportunity as having the greatest poverty and related problems.

The main feature of STREETS was the hiring of neighborhood adults and youth to help in the work of the agency. The youth worked primarily with younger children. Those with leadership quality were sought. The adults, called neighborhood aides, shared, with the professional staff, in the supervision of the youth, called program aides. The aides also benefited from the agencies' programs as well as promoting them for others. The program was set up in units designed to serve 1,500 youths. There were eight units and a staff of 488 to serve 12,000. Those interviewed were enthusiastic about the program although some aides did not achieve the level originally set for them. The respondents felt that great success had been achieved in some areas. They felt that some aides learned to give up antisocial acts, assumed great responsibility for children, and returned to school. They also carried over to their own peer group what they had learned.

Central to this success was the familiarity of the agencies involved with the neighborhoods and clientele. They already had skill in working with alienated youth and this made their commitment to the most difficult of the young people more durable. They seem to have a good sense of the types of jobs aides can perform, and, in general, the program incorporates the advantages of using indigenous workers. Aides received salaries of about $45 for a 30-hour week.

Detroit—SWEEP (Summer Weekend Evening Emergency Program)

This is a summer weekend program conducted by the Neighborhood Service Organization in high delinquency and poverty areas, in cooperation with the Youth Bureau of the Police Department, with schools, universities, museums, and others. It was for girls and boys, ages 12 to 17, referred by schools and other agencies or people because they were dropouts or were having difficulty. There was also concern that these young people might present problems during the "long hot summer."

The active program was well attended. In addition to group meetings and home visits, the program took children horseback riding, to Detroit Lions' practice, to the Tigers' games, and to many other interesting places in the area. Street workers and teachers made up most of the program staff. The youngsters were asked to write their evaluation of the program, too, and were positive about the experience. Again with this program, as with the one just described, the experience of the parent agencies was important, and the worker's skills and orientation were of vital importance to the success. The weakest part of the program is its temporary and limited nature. When summer ends, the stresses and deprivations continue, and young people live with and react to them all year. The choice here is between a successful fragment or nothing at all.

Los Angeles—ESCAPE STRING (Education in Service Careers and Employment—and Service Toward Redirection of Impressionable Neighborhood Groups)

A major objective is to help predelinquent youth, and another is to help low income Negro and Mexican-American youth of academic promise to continue their education with the help of salaries paid for work with this agency. A team of professionals contacted gangs and their families, and then the college students from similar low income families were assigned to work with them. Professionals supervised the college students. A very satisfactory aspect was the involvement of the students in the agency. As the program went on, if any of the college students were interested in social work, everything possible was done to assist them in attending a graduate school of social work. The staff felt that in some cases the experience gave some college students the motivation to stay in college. The young people helped also benefited. Again, the long experience in this field of the parent agency was important.

Los Angeles had many other programs:

The South Central Volunteer Bureau recruited volunteers for work in ghetto areas. It was very active in helping get food and supplies into the Watts area during the riot. It was felt that many volunteers benefited from this experience.

The Neighborhood Adult Participation Aides worked with a wide variety of agencies to allow them to extend their services into areas that normally would not be offered. Homemaking services or foster father activities were two examples.

The Los Angeles Human Relations Commission had a number of projects. They hired some militant young Negroes to be a link between them and the community. It was felt that this helped in preventing trouble in their areas.

The Los Angeles County Civil Service instituted a program to employ poverty youth in 30 types of civil service jobs as aides. They also searched for other types of employment. Testing and orientation were given prior to employment. Role playing and movies were used to help educate and prepare the young people. Psychiatric consultation was used when necessary and monthly employment followup was done where necessary.

Travelers Aid gave special help to newcomers to the Watts area.

Money was available to help with interim crises. Public assistance was not available here until residency requirements were met. Help was given with school problems, medical care, legal difficulties, mental illness, etc. Aides from the previously mentioned Neighborhood Adult Participation program were extensively used.

Rochester, New York State Division of Employment: Special Youth Project; Manpower; and City-County Youth Board: Youth and Work Project.

The focus for these three related programs was employment of poverty-level youth and appropriate training and job experience for them. The State Employment Service had "outreach" programs to recruit youth in streets, bars, pool halls, etc. Some workers could speak Spanish so that Cubans and Puerto Ricans could be reached. Contacts were followed up if office appointments were not kept.

The Manpower Section was a training program run by the Board of Education and the Employment Service. It offered remedial programs, counseling, and primarily vocational training.

The Youth and Work Program was for girls and boys 16–18 years old. Those who were least likely to find satisfactory jobs and most likely to get into trouble were selected. Odd jobs in the program office were used for diagnostic purposes. Then some of the young people were given individual assignments. Others were given group assignments with group discussion first, and then were interviewed for jobs or received more training.

Many other programs were examined during this study. One conclusion was that the experience of local groups well grounded in work with this population was very important. The locally shaped programs were characterized by flexibility and imaginative use of existing agencies and facilities. It was a general consensus that morale was high on these programs and the most discouraging feature was their time-limited existence in some cases. These programs were, by and large, well able to attract the number of young people they were designed to serve. Young people did want jobs and training. The participants felt that the jobs they obtained had the value of being hopeful examples for others in their neighborhoods.

However, these programs, it was stressed by those interviewed, did not basically change the ghetto. The stresses that unemployment cause, and the increasing problems caused by automation, would take far larger and more potent projects to combat.

Racial Feelings

This study discloses the feelings that have become more pronounced as time has passed. At the time of this study the issue of Black Identity and Black Pride was well in evidence in the ghetto. The study showed that despite the riots of that period the anti-white feeling was not as high as might have been expected. The Black Militants influenced directly only a small part of the ghetto population, although the climate of hate that they preached was moving in that direction. An awakening of many young people to the racial inequities was described. Even the most successful young people in our city slums are finding that they cannot love anyone who helps to keep them down. The anger is high and the chances that it will erupt against a policeman or some other symbol of their oppression is very great.

The study showed that a key problem is in their own identity. The tremendous necessity to reach back and find a cultural history that can bolster respect has led many to study Africa. Others are searching for Negro achievements in more recent slavery and post-slavery periods. A difficulty here is that many Negroes who are tremendously accomplished have achieved this by "doing it Whitey's way" which causes many Negroes to classify them as "Uncle Toms." The solid achievement of even accomplishing that is often lost in this issue. Despite the fact that this study showed that many "successful" Negroes who have achieved middle-class status are very interested and concerned about what happens in the ghetto, this concern is not believed or recognized for the most part. Undoubtedly this is one of the reasons that the civil rights groups are unable to enlist more basic support. The Urban League and the NAACP are often characterized as "Uncle Tom" associations.

Mexican-Americans and Puerto Ricans were beginning in 1965 to show signs that they too would organize and ferment to achieve more opportunity. In some parts of the country their conditions are the worst possible. A particular problem is the language issue. Schools have been unable or unwilling to fully meet the complication of having Spanish be a primary language for this group and still helping them to learn the necessary English to compete successfully here. This is a major problem. In 1966 there were about eight hundred thousand Mexican-Americans in Los Angeles County alone. The struggle of the National Farm Workers' Association to get higher wages and better conditions for grape workers was beginning at the time of this study. It has subsequently become more of a political issue. In 1968 one California congressman passed out grapes with a sign that indicated one should enjoy the "forbidden fruit," and he received many packages back from congressmen in other States who did not wish to anger constituents or labor groups by being seen to accept them.

One Mexican-American group of about 50 members walked out of a Federal Equal Opportunities Conference because they were not represented on the commission that planned the conference. A large group held a banquet to celebrate this act.

Though in some ways the problems resemble those of the Negroes, there is a more marked resemblance to the patterns experienced by other immigrant groups. This study and the one in 1963 showed that the youth seem to be between two cultures. It was the impression at this time that they felt superior to the Mexicans and inferior to the Anglos. This causes the classic pattern of family tension and lack of respect for the parents and the old ways. Gang formation is a common way to deal with this and was attractive to those unfortunate enough to remain in the slums.

The Puerto Ricans are in a similar but different situation. In New York in 1964, figures show that Puerto Ricans were even poorer as a group than Negroes. They share with Negroes high rates of public assistance cases, large families, high unemployment, excessive interest rates for loans, etc. They share language and cultural tension with the Mexican-Americans. They, however, seem to have considerable pride in being from Puerto Rico and this is a definite plus, just as the island is a retreat and a refuge for them from life on the mainland.

The Puerto Rican Community Development Project is a comprehensive plan and program for meeting a wide range of needs. It was financed by antipoverty funds and was built upon existing programs.

Conclusions

By 1965 the apathy had coalesced into anger. The conditions in the slums and the state of day-to-day life proved too provocative and unyielding. The methods of protest were too tame and unsatisfying to the needs of the ghetto resident. The alienated young person living in the slums and feeling he had so little to lose was immersed in this atmosphere. The release felt by many who had been pent up was stronger than the prohibitions. Although mixed feelings about the riots are common, the pride at turning their image from "shiftless" to dangerous was welcome for many Negroes. It is definitely more manly to be dangerous in this country than it is to be "shiftless and lazy." Whereas the civil rights movement was able to achieve change in the South and the new laws were making changes, the latter were not of sufficient measure to make a difference in the ghettos of the North. The riots undoubtedly hurt the Negro communities involved—they have suffered real loss, food scarcity, and loss of sustaining businesses. But the gains are real also and unfortunately are often more visible than the gains of slower, more moderate methods. Politicians and policemen, for instance, have become more conscious of ghetto problems and their explosive potential.

Whites, too, have suffered. All have suffered. The investigator found that during this study it was virtually impossible to limit the time spent on this subject with any respondent as the feelings flowed in such an intense and meaningful way.

A warning has come out of this study not to lump minority groups together. Specificity and tailoring to meet conditions in individual areas have been successful. Other suggestions are that intergroup contact should be fostered. Conference, tutoring programs, training programs are all valuable if they contain meaningful contact between ethnic groups. Goals which are yielding of fairly quick success win alienated young people into organized campaigns faster than more abstract goals.

The study suggests that the formation of overall city poverty agencies may be unwise. It was found that they tend to generate problems that get in the way of their own work. The investigator suggests that perhaps it is better for local agencies to deal directly with Federal officials for antipoverty funds. Another point is that funding is important to agencies and must be given a firm enough and long term enough basis to make it viable. This study revealed that many agencies are forced to curtail and limit their involvements due to fear of cutbacks or loss of funds. There is the concern that programs begun and dropped can arouse more antagonism than those never started. Many agencies have to devote themselves mainly to keeping alive.

Further, the investigator urges that the real serious nature of the problem of the ghettos be faced. He recognizes that a realistic appraisal of economic and social network that causes slums and its tremendous human toll be faced. Varied programs are needed. This study clearly shows that no one type of program will reach all. Even if at times the cost may be high, such programs must still be supported. The difficulty and, at the same time, the ease of predicting riots is thought-provoking. In 1969 some politicians and civil rights leaders are predicting that our major riots are over, but this is hardly assured, and, if it were, the human cost of our racial problems and the loss of any of our young people would still be too high. The commitment has been made in this country many times and in many ways and needs now to be made a reality.

The investigator suggests that many legislative and other steps are needed to combat poverty. The guaranteed annual income is suggested as one idea that might be successful. Cooperative housing might overcome the need for large investments on the part of poor people and give them a chance at ownership rather than at being renters. Street work and social agencies have a strong chance at helping touch alienated youth. The pride in racial identity needs to be supported, but not the hate messages that sometimes accompany it. Indigenous workers recruited from an area to serve an area are also particularly successful, and these positions provide employment for those who might otherwise be unemployed, which is also valuable. Birth control information is often sought in the slums and should be made available. The cities need to improve on services to the deprived areas and so on.

Primarily, tolerance must be found for the forward and then backward and forward again patterns of work in this area.

This study suggests that education in the slums is a complex issue and an important one. While the need for technical education exists and is important in preparing young people for our mechanized society, the assumption should not be made that this type of education is all that is needed in the slums. Many students need assistance, educationally and financially, to achieve their potential. Many more could attend college. Programs with liberal admission policies, even preferential admissions, etc., need to be developed.

The investigator also postulates that, if each large firm undertook to hire and train some of these deprived young people, the effect would be striking.

As has been previously mentioned, community service positions utilizing indigenous workers can fill some important needs in our society. Almost all large community institutions, such as hospitals, schools, and social agencies need help. The presently alienated, almost wasted young person could provide the manpower needed for better operation in all these community institutions. Training is the key in both private and government programs for effectively teaching and employing these young people.

A major mistake would be to underestimate the forces that keep slums as slums and keep minority groups in them. The solutions to these problems are extremely complex. One conviction of the investigator is that the poor should be consulted and involved with programs, even though this may at times make progress slower and more complicated.

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GENETIC FACTORS IN MOOD DISORDERS

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Are biological factors involved in the genesis of the major psychotic illnesses? For instance, to use the simplest hypothetical case, can an abnormal metabolite, the molecular expression of a faulty gene, set off a train of biological processes in an individual that manifest in behavior we call psychotic? The researchers who are concentrating on such questions do not mean to imply that they do not also regard psychosocial factors as critical in shaping human behavior. On the contrary, there is little doubt today that a person's basic personality is the product of dynamic interaction between his innate and constitutional endowments and the psychosocial environment in which he matures. The nature-nurture dichotomy is as dead an issue in behavioral research as the notion of phlogiston is in chemistry research.

The evidence against a simplistic either-or view comes from many different sources. Psychopharmacology provides a pointed example. Somatic treatments such as electroshock and psychoactive drugs indisputably relieve psychotic symptoms even though no one claims they cure illnesses. On the other hand, antidepressant drugs have been shown to be more efficacious if patients receive them in combination with the intensive interpersonal interaction fostered in milieu therapy. Similarly, while antipsychotic drugs make chronic schizophrenic patients far less disturbed and more cooperative, it is only after participating in social relearning programs that some may be well enough to return to the community.

Thus, without losing sight of the potent influence of phychosocial factors, the fact that somatic treatment alone can bring about such dramatic changes in psychotic behavior makes it reasonable to seek the biological bases of such behavior, the bases on which the drugs presumably act.

One of the core problems hampering the search for biological factors in depressive illness has been the inability to sort patients into homogeneous groups for study. Clinical and research experience indicates that there is not one depressive illness but several. (More generally this group is the *affective disorders*—which includes mania and depressions—illnesses in which the primary disturbance lies in the patient's affect, or mood.

The most obvious and straightforward way to group depressed patients is according to the nature of the probable precipitant of the illness. On this basis all depressions have been separated into one of two fundamental groups, endogenous and reactive. Most researchers acknowledge this to be a crude refinement at best, however, and one does not really shed much light on the differentiation problem. Other attempts at sorting have also been made. For example, depressed patients have been grouped on the basis of the presence or absence of certain symptoms, on the response to one or another treatment, and on the age at onset of illness. With varying degrees of consistency, these, too, have been used as rationale for the basic endogenous-reactive division and for further subdivisions of endogenous depressions into these diagnostic groups: manic-depressive disease, which can be manic type, depressed type, or mixed; phychotic depressive reaction, nonrecurrent or recurrent; and involutional depressive reaction.

The terms used to delineate subgroups of endogenous depression do not sound very exacting, which accurately reflects the fact that the groups are not based on specific, objective, biological criteria. But the problem of defining depressive illnesses by such criteria contains a frustrating circularity. Until researchers can study a homogeneous group of patients—that is, one in which all the patients are suffering with the same illness—they are not likely to find any biological abnormalities characteristic of the group. Indeed, if the illnesses are different, there is every reason to expect the underlying biological processes to differ as well. On the other hand, until researchers can group patients according to hard biological criteria, they cannot be certain they have formed a homogeneous group to study.

The work of Dr. George Winokur and his associates at Washington University in St. Louis has been concerned with these two interwoven problems—differentiation of the mood disorders and the biological bases of these illnesses. In a series of studies concluded a few years ago, the investigators accumulated a body of evidence suggesting a new way to distinguish among disorders of mood. On the basis of this evidence they postulated that at least two separate disease entities are subsumed under the heading of primary affective disorder, and that specific genetic factors underlie each disease. They then turned their attention to the task of tracing the passage of these putative genetic factors from one generation to the next.

This report describes the work of the St. Louis researchers. It summarizes the results of their many studies and the reasoning that guided them in the formulation of important new hypotheses about disorders of mood.

Family Patterns of Psychiatric Illness

The investigators were looking for something else when they uncovered the data that drew their interest to genetic factors in mood disorders. This happened in the early 1960's when they were looking into the question of whether parental deprivation in childhood was critical to the development of psychiatric illness in adulthood. To pursue the question, they had to get fairly detailed family histories from their subjects.

Some 750 psychiatric patients composed the study sample. They were consecutive admissions over a 7-month period to Renard Hospital, the 106-bed psychiatric division of the Barnes General Hospital in St. Louis. (To avoid having to contend with the potent variable of race, a small number of Negro patients admitted during this time period were not included in the sample.) On admission, every patient answered the questions of a short structured interview.

The researchers wanted to know about parental deprivation in the childhood of their subjects, so the interview included questions about death, separation, and divorce of parents, of course, and also about psychiatric and medical illnesses of parents; prolonged illness is a peculiar, indirect, but very real source of "absence" of a parent and, consequently, deprivation of a child. Other interview responses enabled the investigators to characterize the patients by age, sex, marital status, socioeconomic status, and diagnosis. The psychiatric diagnosis for each patient was decided upon in staff conference at the time of discharge. All those with primary disturbances of mood, depression or mania, were diagnosed simply as suffering with affective disorder. That is, they were not further classified into any of the affective disorder subgroups. The diagnoses of alcoholism or other addictions always were given precedence whenever they appeared in the clinical picture.

Another group of 250 people, patients admitted to other wards at Barnes during the same time period, were selected to match the study population precisely on the variables of age, sex, marital, and socioeconomic statuses. Each control subject also was given the structured interview. All interview data were transferred to cards for sorting by computer. The results of these analyses were noteworthy on two counts.

First, no statistically significant differences (at the .05 level) appeared between the study and control populations in terms of parental loss due to divorce, separation, or deaths. Nor were there any differences in terms of the subjects' ages at the time of parental deprivation. Similarly, no differences emerged when the total psychiatric group was separated according to diagnoses and compared to the appropriate matched portions of the total control group. In short, the findings left no room for doubt that the loss of a parent or parents, regardless of a person's age at the time of loss, was not in itself a significant factor in the subsequent development of psychiatric illness. As the researchers pointed out, this is not to say that parental loss may not be a crucial—even *the* crucial—event in a particular patient's life history. It was clear, however, that the loss of a parent from a child's environment was no more often associated with the later appearance of psychiatric disturbance than it was associated with the absence of such illness.

These results provided a fresh and welcome insight into an old question in psychodynamics. A great many studies have purported to show that parental loss *is* seen significantly more often in the lives of psychiatric patients as compared to emotionally healthy people. In fact, such studies seemed to confirm the commonsense notion that it is essential to a child's personality development to have both parents with him as he grows. How many ill-matched parents reluctantly decide to stay together, how many single parents hastily make another marriage, because they believe it is necessary, at any cost, "for the children's sake"? Yet all these earlier studies have drawn serious criticisms for methodological or analytical flaws. The design and procedures of the St. Louis study appear to satisfy the requirements for validity and reliability, and their findings about parental loss may be considered definitive.

The second major finding of the parental loss study emerged when the investigators compared the two groups of subjects on family history of psychiatric illness. They found that first-order relatives—mother, father, siblings—of phychiatric subjects had significantly more total psychiatric illness than did relatives of medical control subjects. Moreover, when the data were examined in detail, the statistically significant differences produced some striking patterns.

In addition to asking each subject about the occurrence of psychiatric illness in his family, the researchers also obtained enough information to make probable diagnoses of ill family members. So it was that they were able to tabulate which psychiatric illnesses appeared in the family of every subject. They found that the 366 patients with affective disorder had significantly more affective disorder in all three types of first-order relatives than did controls; all first-order relatives of the 101 schizophrenics had significantly more schizophrenia than did controls; the 82 neurotic patients came from families with more neurosis, and the 62 alcoholics from families with more alcoholism. Thus, the correlations revealed consistent family patterns of similarity in the type of psychiatric illness seen.

The only illness that cut across these family patterns was alcoholism. It was the only other illness that persistently appeared in the family members of subjects in all diagnostic categories significantly more than in the controls, with the sole exception of chronic brain syndrome. Nevertheless, the researchers did not feel that the appearance of alcoholism diluted the strength of the familial patterns of similar illness. They considered it likely that alcoholism was a symptom of many psychiatric illnesses and therefore not very useful in differential diagnosis.

These findings suggested to Dr. Winokur and his colleagues that the family members of a psychiatric patient, if they were psychiatrically ill, suffered with the same illness as did the patient himself. From this the investigators concluded that factors associated with families—genetic and/or environmental—play a key role in the origin of mental illness.

The work of other researchers, notably the classic twin studies of Franz Kallmann, also have shown high rates of concordant diagnoses in family members, increasing with the closeness of the genetic relationship. With this previous work and the impressive evidence of their own study in mind, the St. Louis researchers postulated that there was a genetic factor behind the correlations they had uncovered in their data.

At the conclusion of the study on parental loss, then, the researchers decided to explore the hypothesis that genetic factors are important in the etiology of mood disorders. In order to pursue the question, however, they had first to cope with the problem of differentiating among these illnesses. This they proceeded to do in a systematic series of studies. In each study they were asking one basic question: Are there meaningful differences among the family histories of patients in the various diagnostic subgroups of mood disorder? To put it another way, the investigators set out to determine if mood disorders could be differeniated on the basis of family history factors.

Attempts to Differentiate Depression Subgroups

The population of some 360 patients with mood disorders, part of the consecutive admissions to Renard described above, provided the data used by Dr. Winokur and his co-worker in these studies, Dr. Ferris N. Pitts, Jr. In the first of the series, they compared family history factors in a group of 75 patients diagnosed by their private physicians as "reactive" depressions to a group of 212 patients whose psychiatrists had diagnosed them as suffering with one or another of the "endogenous" mood disorders. The researchers found no important differences between the two groups on a number of variables of family history. The only statistically significant difference appeared in the percent of siblings given probable diagnoses of affective disorder—one-third of siblings in the endogenous group compared to 19 percent in the reactive group. The investigators did not think this was a meaningful difference, however, because they thought it was a consequence of the difference between the two groups in mean age. Mean age was 50 years for the endogenous, and 39 for the reactive group. Not as many siblings of the younger reactive patients had passed well into the age of risk for affective disorders, which is taken to be approximately between ages 15 and 60.

Doctors Winokur and Pitts also looked into the clinical validity of the reactive-endogenous distinction. In only 12 of the 75 cases of reactive depression did the diagnoses of the hospital staff agree with those of the private physicians whose patients these were. The discharge diagnoses decided on by the hospital staff for 45 of the 75 was endogenous affective disorder. Other diagnoses given included alcoholism, hysteria, personality disorder, and anxiety reaction. The staff's diagnoses of endogenous affective disorder were made independently of family history data. When the investigators looked at the family histories of this group of 45, however, they found them to resemble the family histories of the original group of 212 endogenous patients even more closely than had those of the original group of 75 reactive patients.

Each case history of the 12 patients diagnosed as reactive by both visiting and staff psychiatrists was examined in detail. In two cases a depression in reaction to a medical illness seemed likely. In every other case there was enough evidence to suggest diagnoses other than reactive depression. Only two of the 12 patients were more than 40 years old and five were less than 20 years old. Thus, in many cases the investigators felt that a firm diagnosis could be made only after following the patients for a few years.

The findings of this study indicated that the distinction made at the clinical level between endogenous and reactive depressions was not paralleled by distinctive family history factors. Yet, in view of the strong possibility that mood disorders have familial components, one would expect there to be a difference in family history factors *if* there were a real difference—as the labels imply—between the two. The principal criteria used to differentiate reactive from endogenous depressions are (1) the presence of precipitating events in the patient's life and (2) the absence of such relatively severe symptoms as retardation, insomnia or early morning awakening, and marked weight loss. But the first criterion depends on the subjective judgment of the physician making the diagnosis, and the second may well reflect quantitative rather than qualitative differences. The investigators concluded, therefore, that although the clinical pictures may differ somewhat in detail, there were still no reliable bases for considering reactive and endogenous depressions to be separate illnesses.

The second study in the series focused only on patients with endogenous mood disorders, that is, manic-depressive reaction, involutional depressive reaction, or psychotic depressive reaction. In this study the St. Louis researchers pursued a lead that had appeared in a report by a Scandinavian investigator, Dr. D. Kay. This researcher had studied two groups of patients with mood disorders, those with onset of illness before age 60 and those with onset after age 60. He investigated the families of these patients and calculated for their first-order relatives the morbid risk for mood disorder, that is, the statistical probability that an individual will suffer with the illness sometime during his life. The risks in families of early-onset patients were found to be substantially greater than those in families of late-onset patients.

These data suggested a testable hypothesis to Dr. Winokur and his associates. The hypothesis was that, compared to affective disorder patients with no family history of affective disorder, such patients with a positive family history would show earlier onset and greater severity of illness as judged by hospital admissions. In this study, then, the investigators were trying to get at an answer to their basic question from another direction. When there *is* a difference in family history, they asked, are there also differences in the affective disorder the patient suffers?

In order to work with a population that had entered well into the age of risk for the illness, the investigators studied all affective disorder patients in their large sample who were more than 50 years old. They found no differences between patient groups with and without family histories of affective disorder on the variables of age at first admission, total admissions, presence of medical illness, and recent bereavement. In other words, none of the variables examined—all of which have been used to differentiate among mood disorders—correlated in any way with family history factors.

Two other studies in this series reached essentially similar conclusions in that they failed to reveal differences in family history factors among the diagnostic subgroups of mood disorder. In one, the investigators again looked at patients with and without a family history of the illness; on a number of clinical variables they could find no consistent differences between the groups. In another, they compared a group diagnosed as manic-depressive with another diagnosed as psychotic depressive reaction and could see no difference between them in family history factors.

To summarize the research results described so far, Dr. Winokur and his associates demonstrated that there were no points of correlation between family history factors and any of the standard diagnostic groupings of depression and affective disorders. On the one hand, distinctive family history factors did not appear in parallel with any of these subgroups, including the basic endogenous-reactive separation. Conversely, when patients were grouped on the simple basis of positive or negative family history of the illness, no significant clinical differences could be discerned. It was not until the researchers set aside the standard diagnostic distinctions and considered their affective disorder patients as a whole that they were able to uncover some meaningful family history factors in this group of illnesses.

Two Types of Primary Mood Disorder

For the next study, the investigators returned to the data from the large study population of 750 psychiatric patients. They divided this large group in two: 366 patients with mood disorder went into one group, and 382 patients with diagnoses other than mood disorder made up the other. Data from the original control group of 250 medical patients were also used. These data were analyzed in several ways. First, the prevalence of mood disorder in various subgroups was calculated.

- Among the 500 parents of the control subjects, the investigators found that 10, or 2 percent, had been given probable diagnoses of mood disorder. There was no significant difference in prevalence between mothers and fathers afflicted.
- The parents of nonaffective disorder patients had received probable diagnoses of affective disorder significantly more often than control parents. The prevalence rate in this parent group was 4.7 percent. Again, there was no important difference in prevalence between mothers and fathers.
- Among parents of patients with mood disorders, the rate went very much higher and showed pronounced sex differences. Here, 22.9 percent of mothers and 13.6 percent of fathers had been given diagnoses of mood disorder. This rate was significantly greater than the comparable rate calculated in the carefully matched control group of 180 controls.

The sex difference revealed by this analysis was very striking. A comparable difference was seen among the patients themselves, where there were two females to every male. At least two factors might have accounted for some or all of this sex difference. First, there were simply more mothers than fathers in the parent group; more fathers were dead. Second, cultural factors might affect the very manner in which an illness is primarily manifested. Thus, the data suggested that the percentage of mothers with affective disorder was matched by the percentage of fathers ill with affective disorder *plus* alcoholism. (The question of whether alcoholism in males is the expression of underlying affective disorder was dealt with in another study, which is described in a separate section below.) Even allowing for the greater number of deceased fathers, however, the investigators still found a significant surplus of affected female parents over affected male parents in the families of patients with mood disorder.

Drs. Winokur and Pitts made one other analysis that yielded suggestive results. They compared prevalence rates among siblings of affective disorder patients with and without a family history of the illness. Here they found that a parent with affective disorder was significantly more likely to have children with this illness (the count excluded the patients themselves) than was a parent free of the illness.

Here at last was an opening. By analyzing family history data the way they did in this study, the investigators succeeded in uncovering some suggestive evidence pointing to genetic factors in mood disorders. For one thing, they saw that the prevalence of this illness in a group of well-matched controls was around 2 percent. (This figure was in line with the prevalence rate for the illness found in the general population by two distinguished Scandinavian studies.) Clearly, this figure was significantly less than the prevalence rate found in families of patients with the illness. When an illness is seen to occur with greater frequency in certain families as compared to the general population, the fact is considered to be indicative of genetic factors underlying the illness. For another thing, the investigators saw that the prevalence of illness among siblings decreased as the number of affected parents decreased. This, too, they noted, was suggestive of genetic factors in the illness.

The findings induced the investigators to speculate about possible modes of transmission. They considered both a simple recessive gene hypothesis and a simple dominant gene hypothesis. Neither satisfied the pattern of prevalences observed in the data. Further, the fact that fathers and mothers, if affected, had children of both sexes with the illness made it seem unlikely that an *X*-linked dominant gene mechanism was involved.

The researchers felt that no hypothesis of genetic transmission could be conclusively rejected at this point, however. Their data were not as complete as they might be and, even more germane, it was virtually a certainty that they were working with a population of patients in which more than one mood disorder was represented.

Meanwhile, as these various studies were in progress, the investigators had also begun to gather another large group of consecutive admissions to Renard. The structured interview given each of these patients was designed to get information about family history of psychiatric and medical illness in second-order relatives such as grandparents, aunts, and uncles as well as in members of the nuclear family unit—parents, siblings, and patients' own children. Much of the interview was devoted to getting as complete information as possible about psychiatric illnesses so that soundly based probable diagnoses could be made.

On this point, Doctor Winokur has noted that the absence of abundant clinical observations on which to base diagnosis of ill relatives may have been adequate compensated for by the researchers' ability to apply the best diagnostic tests available to clinical psychiatry—course and outcome. "Thus," he noted, "it is possible to know if family members have passed through the age of risk, if they have recovered, if they are with or without personality defect, and if they have had multiple episodes and/or hospitalizations." Indeed, throughout their studies the investigators encountered instances in which internal consistencies in the data strengthened their confidence in the reliability of the family history method. In addition, their study of suicides in first-degree relatives of affective disorder patients—using the family history method—had yielded data quite consistent with those found in five comparable studies by other workers, all of whom had employed follow-up methods of obtaining information.

As before, patients with one or another of the mood disorders were grouped as one for purposes of analysis. It should be emphasized that all such patients suffered with *primary* affective disorders. In other words, the diagnosis was based not only on the presence of mood disturbance, but also on the absence of symptoms of other psychiatric or medical illnesses. If a patient showed mood disturbances that appeared to be concomitant with such disorders as anxiety reaction or hysteria, he was excluded from the group of affective disorders.

There were 1,075 patients in this second sample, of whom 426 were given a diagnosis of affective disorder. (In what follows, these patients are referred to as "probands.") For use in many of the analyses they wished to undertake, the investigators calculated morbid risk for affective disorder in the relatives of probands. As noted above, morbid risk is an expression of the probability that an individual will manifest the illness sometime during his life.

Drs. Paula Clayton and Theodore Reich were co-workers with Doctor Winokur in many of the studies made with this group of patients. The results of the several analyses they performed are summarized below.

First, the researchers returned to the question of differences between families of probands with early onset (before age 50) and families of those with late onset (after age 50) of the illness. The morbid risk among mothers of early-onset probands was 29.6 percent, significantly higher than that for mothers of late-onset probands, which was 12.4 percent. Comparing male and female siblings of early- and late-onset probands, however, the investigators found the morbid risks to be practically identical, and from this they concluded that there were no meaningful differences in the genetic backgrounds of probands predisposing to early or late onset of the illness.

Another analysis revealed a statistically significant difference between the sexes of affected siblings of all affective disorder probands.

Almost twice as many sisters as brothers were diagnosed as suffering with mood disorder.

A third analysis dealt with the question of the effect on the morbid risk for siblings of parents with affective disorder. When both parents were judged to be suffering with affective disorder, the morbid risk for their children was 43±19 percent; if one parent was affected, it was 26±3 percent; if neither was affected, it was 12±1.4 percent. Clearly, there was a highly significant difference in the risk for children of two affective disorder parents compared to that for children of parents free of the illness. This finding was similar to and even more striking than the investigators' earlier finding of clustering of affective illness in families. It suggested to them that it might be possible to distinguish different kinds of affective disorder on the basis of such familial clustering.

With this in mind, the investigators separated the probands into two groups. One included the 112 probands with a two-generation history of mood disorder, theirs and their parents'. This family-history-positive group (FH-positive) was suggestive of a dominant-gene mode of transmission. The second group of probands included 129 patients who showed no history of any psychiatric illness in any first- or second-order relatives. They constituted the family-history-negative group (FH-negative). These groups were then compared on a number of variables such as age at onset, depressive symptoms, and sex ratio and were found to look very much alike.

On one variable, however, the groups were significantly divergent: Only four of the FH-negative group were manic at the time of admission to the hospital, while 16 of the FH-positive group were manic on admission. The difference was statistically significant at the level of .003.

The researchers later reinterviewed two of the four manic-on-admission patients in the FH-negative group and found them to be false negatives; that is, they found reason to doubt that their families were indeed free of affective disorder. (So far, the researchers have not been able to reexamine the other two manic-on-admission probands in the FH-negative group.) Further, when probands who had been manic *at any time in their lives* were added to those who were manic on admission, the difference between FH-negative and FH-positive groups on the variable of mania remained highly significant.

In short, one clinical factor—the presence of mania—definitively differentiated the FH-positive from the FH-negative group of probands. The researchers' strategy was successful. By assuming a genetic difference based on positive or negative family history, they had uncovered a clear-cut parallel difference in clinical symptomology. These findings enabled them to formulate an important new hypothesis about affective disorders. There were two types of primary affective disorder which, in turn, were to be distinguished from secondary affective disorder and reactive depressions. They described the two primary types as follows.

"*Primary affective disorder, manic-depressive disease.*—This is a distinct group, both genetically and clinically. This illness seems to have a dominant kind of genetic transmission, leading to a clustering in families. Mania may be one form of this illness.

"*Primary affective disorder, other.*—The depressions of this group are in one way different from the depressions of the manic-depressive group. * * * The only clinical difference we found is the absence of mania in this group. We have no evidence as to what other factors are involved in this group or whether other types of genetic transmission or specific phychological or metabolic factors are involved."

Thus, the patient, systematic work of the St. Louis researchers finally paid off. They had succeeded in marking a tentative boundary in the otherwise featureless map of mood disorders. Manic-depressive disease, also called bipolar psychosis, was to be seen as one separate entity, and depressive disease, or unipolar psychosis, was to be regarded as another. Doctor Winokur further clarified the nature of this distinction in a recent comment. "At this point," he said, "manic-depressive disease is best defined in terms of a family in which one or more members show mania. Depressive disease is best defined in terms of a family in which all members who are affectively ill show depression only."

In the opinion of the researchers, the findings bore important implications for the design of all future research concerned with mood disorders. "It is inconceivable at the present time," they wrote at the conclusion of their report, "that any study of drug effects or biochemical abnormalities would fail to take into account the possibility that two specifically different genetic types may be involved." For their own part, Doctor Winokur and his colleagues decided to concentrate their research on the manic-depressive group.

Genetic Studies of Manic-Depressive Disease

The most recent work of the St. Louis group has been concerned with the search for additional evidence in support of the hypothesis that a specific genetic factor is involved in manic-depressive disease. The investigators have tried to establish the existence of this putative genetic factor chiefly by atempting to deduce a mode of transmission. They have asked: Do manic-depressives breed true? Are both sexes affected equally? Can either affected parent pass the gene to offspring? To both sons and daughters? At the same time, they have explored the possibility that a manic-depressive genetic factor may be linked to one of the well-known genetic markers such as color blindness or blood type groups.

Although the group in St. Louis is the only one doing such research in this country, a number of European workers, mainly in the Scandinavian countries, have long been interested in the genetics of mood disorders. Doctor Winokur has pointed out that, with a few recent exceptions, the European studies have not used homogeneous patient populations and, consequently, their findings have not been consistent. Because of the strong probability that more than one illness was represented in their proband populations, he has suggested that these studies be reevaluated.

Possible Modes of Transmission

Doctor Winokur and his colleagues, Doctors Clayton and Reich, gathered a presumably homogeneous sample for study. This was a group of 59 manic-depressive probands, all of whom were either manic on admission or manic at some other time in their lives. The investigators followed up 30 of these patients 18 months later. At that time they personally interviewed each patient and all first-order relatives, whenever this was possible. The researchers were now using the family study method, which is a little different from the family history method, to make probable diagnoses of psychiatric illness in the families of probands.

Do manic-depressives breed true? The researchers' analyses indicated that they do not. Depression without mania, unipolar psychosis, was found to be more common than manic-depressive disease, or bipolar psychosis, among parents and siblings of manic-depressive probands.

To shed more light on the problem of heterogeneity, Doctor Winokur reexamined the data presented by Doctor A. Stendstedt, a Swedish investigator, in his monograph on manic-depressive disease published in 1952. These data indicated that mania tended to cluster in certain families and to be entirely absent in most others. (Indeed, in the clinic, depressions outnumber manias by about 10 to 1.) Very few of Stendstedt's families contained affected members all of whom suffered only mania, but many families had all affected members showing depression only.

The evidence suggested, then, that while depression-only probands appeared to breed true, manic-depressive probands have both depression-only and manic-depressive illnesses in their first-degree relatives. One possible interpretation is that manic-depressive disease is the expression of more than one gene, that is, it may be a polygenic illness. A second gene may be a necessary postulate to explain why, in any single family, some members show both mania and depression while other affected members show only depression.

Another classic way to deduce the mode of transmission in a disease suspected of having a genetic base is to study the patterning of sex differences in affected parents and offspring. Using this approach, the researchers uncovered some relatively clear-cut data.

They focused on the possibility of an X-linked dominant gene because they had consistently found a preponderance of females over males in their studies of affective disorders as well as in their more recent studies of manic-depressive illness. To check this possibility, they tabulated the sexes of 49 pairs of ill-parent/ill-child drawn from the sample of manic-depressive probands. The tabulation revealed that there were about as many affected mothers as there were affected fathers who had affected daughters. But, while 14 ill mothers had affected sons, only one ill father had an affected son.

Except for the one ill-father/ill-son pair, this is precisely the situation one would expect to see if manic-depressive illness were transmitted via an X-linked dominant gene. This is so because a son gets an X chromosome only from his mother; from his father, of course, he gets a Y chromosome. Thus, if the disease were borne on the X chromosome, no affected father could pass it along to his son. Doctor Winokur offered one possible explanation for the single ill-father/ill-son pair. Perhaps the mother of this male proband carried the gene and passed it to her son even though she herself did not manifest the illness.

The hypothesis of an X-linked dominant gene in manic-depressive illness is an attractive one because it suits the investigators' finding that perhaps twice as many women as men suffer with this illness. If a father can pass along the illness only to daughters, in the X chromosome which he donates, and a mother can pass it equally to sons and daughters, since her donation is always an X chromosome, then obviously there will be more females than males who possess the gene and manifest the illness. Doctor Winokur has noted that there are many instances of ill-father/ill-son pairs among depression-only probands. In this group, too, there is a preponderance of females over males affected. The genetic reason behind this sex difference has not yet been sought, but Doctor Winokur believes that it will prove to be quite different from the one postulated for the sex difference in manic-depressive disease.

Association and Linkage Studies

The presence of a genetic factor in manic-depressive disease could be established conclusively if it could be shown that the illness is either associated or linked with a known genetic marker. Association and linkage are specific concepts of genetic mechanisms. The process of *association* is said to have occurred when two genetically separate traits are found in nonrandom distribution in a population. For example, it has been postulated that peptic ulcer is associated with secretor status and type O blood. *Linkage* occurs when two genes, responsible for two separate traits, are in such close physical proximity on the chromosome that they almost invariably assort together. The two traits that they represent are thus exceedingly likely to occur in the same individual. While association may be seen in a population, linkage may be found only in a family.

The demonstration of linkage between manic-depressive disease (or any subgroup of the affective disorders) and a known genetic marker would have far-reaching consequences for research, the least being that it would settle the question of a genetic contribution to the illness. Knowledge of linkage would give psychiatrists a powerful predictive tool. If linkage can be established, Doctor Winokur pointed out, "we will be able to take a manic-depressive parent and tell which of his children is likely to show the illness in adulthood. We will also be able to study children who are prone to develop the illness." Researchers could study the metabolic, physiological, and psychosocial factors that also contribute to, or prevent, the disease from developing. Such knowledge could be the beginnings of a rationale for preventive psychiatry.

Doctor Winokur and a co-worker, Dr. V. L. Tanna, recently reviewed the many studies that have explored the question of association between psychiatric illness and blood types classed by the ABO system. They found that the evidence for such an association was not consistent. Nevertheless, they thought the question ought to be considered still open because of the methodological difficulties that have stood in the way of designing a definitive study that would yield definitive results. These have been the problems of collecting a homogeneous diagnostic group and of finding a suitable control population. Doctors Tanna and Winokur themselves undertook a study of association between ABO blood types and affective disorder. The found no evidence for such an association.

These investigators also did the first American study concerned with the question of linkage between genetic markers and psychiatric illness. Using sibling-pairs from affective disorder families, they sought evidence for linkage between ABO blood types and various types of affective disorder. They were unable to find any such evidence.

The agglutinogens of the red cell membrane that the ABO system classifies are believed to be expressions of genes located on the autosomal chromosomes. In view of the evidence pointing to sex linkage in manic-depressive disease, it seemed to the St. Louis investigators that a more likely place to look for linkage between the disease and a genetic marker would be a locus on a sex chromosome, specifically, the X chromosome. Fortunately, there are a number of genetic markers known on this well-studied chromosome—for instance, the gene responsible for color blindness.

The investigators studied two families in which they found both color blindness and manic-depressive disease. Whenever possible, they personally interviewed and tested color vision in all first- and second-degree relatives of probands—parents siblings, children, grandparents, aunts, uncles, and cousins. Information about the few family members who were unavailable for the investigators' personal inquiries was obtained from other family members. This is what they found:

- "All members of the 'Calvert' family who manifest affective disorder are color blind or carry the gene for color blindness, and no members of the family carry or manifest this gene without accompanying affective disorder.
- "Only one member of the 'Alger' family carries the gene for color blindness without manifesting affective disorder. He * * * has had short-lived endogenous mood swings; he is 27 and only part way through the age of risk."

The researchers calculated the statistical probability that these findings were due to chance. It was very small—.0005, far smaller than the accepted standard for statistical significance, which is .05. "Color blindness," they concluded, "is very likely linked to affective disorder." The finding of this probable linkage, in turn, provided presumptive evidence for a genetic factor—specifically, an X-linked dominant gene—in manic-depressive illness.

The investigators have completed one other linkage study that yielded pertinent results. For this study Doctors Winokur and Tanna collected a group of families who showed mood disorders in two successive generations. Each family member was interviewed and had blood drawn for analyses. The blood sample from each subject was typed according to a number of different classification systems and the results analyzed in conjunction with the subject's psychiatric status. The researchers sought to determine whether these families could give information relevant to linkage. They were looking for the concomitant occurrences of a blood type and affective disorder.

The investigators found evidence in two families to suggest linkage between one of the blood type systems, the Xg, and manic-depressive disease. The nature of this evidence was the ratio of recombinants to nonrecombinants among the offspring of affected parents. The deduction was made as follows: By knowing a parent's Xg blood type and whether he or she suffered with affective illness, and then looking at the occurrence of these two traits in the offspring, the investigators were able to deduce whether the genes responsible had assorted together. If not, the offspring was a recombinant; if so, he was a nonrecombinant. Thus the ratio of recombinants to nonrecombinants in any given family gave an indication of the likelihood that the two genes were close to each other on the same chromosome and were assorting together.

In the two families combined, this ratio was 1:7. This finding suggested that the Xg blood type gene was linked to a gene responsible for manic-depressive illness. The locus of the Xg blood type gene is the short arm of the *X* chromosome, which, it should be noted, is also where the gene for color blindness is located. Thus, this evidence also pointed to the possibility of an *X*-linked dominant gene in manic-depressive illness. One other family in this study also gave information in favor of a hypothesis of X-linked dominant transmission.

The data from this study were too few to make it conclusive that manic-depressive disease is specifically linked to Xg blood type; however, it did provide significant evidence to show a genetic factor in manic-depressive disease. The investigators also uncovered in this study additional data in favor of a hypothesis of an *X*-linked dominant gene operating in manic-depressive illness. Considering all the different instances from which such evidence has emerged, the investigators feel the hypothesis must be regarded as a strong one that deserves further study.

To summarize, then, there is now a great deal of evidence suggesting that a genetic factor is involved in manic-depressive illness. The family-history and family-study investigations made by Dr. Winokur and his associates have proceeded on the reasonable assumption that there is such a factor. In so doing, these researchers have narrowed the field in which they and other workers might continue to search for evidence. Thus, their analyses have enabled them to eliminate many possible modes of transmission. Right now, the most likely possibility is that manic-depressive disease may have a polygenic basis, with one major gene being an *X*-linked dominant.

Alcoholism and Affective Disorder

Alcohol is a mood-manipulating drug, and most people who drink do so for that purpose. The great majority of drinkers use alcohol only on social occasions because they believe it helps them to relax, drop defenses and inhibitions, and enjoy the company. For some significant number of others, however, mood manipulation itself is the primary reason for drinking. A lot of these people will say they drink to cheer themselves up when they're depressed. But this self-prescribed "medicine" is an addictive drug and the "cure" for their depression may produce a whole new illness, alcoholism, which can totally obscure the original complaint. In practice, psychiatrists often see patients in whom both mood disorder and alcoholism occur together. It is usually impossible to say which came first, whether one caused the other or, indeed, if there is any relation between them at all.

Doctor Winokur and his associates also had to deal with this problem when they were making diagnoses of the consecutive admission patients. They resolved it in a temporary way by giving precedence to a diagnosis of alcoholism over one of mood disorder in all subjects who showed both illnesses. They had an opportunity to look at the question again, however, in the light of the family history data they gathered.

The investigators found significantly more alcoholism among fathers and brothers of 366 affective disorder patients than appeared in matched control families. They also found that fathers and siblings of 101 schizophrenic patients, and fathers of 82 neurotic patients, all had significantly more alcoholism than did their matched controls. It seemed, then, that while alcoholism was associated with affective disorder in families, it was not associated with affective disorder exclusively.

The association of alcoholism with various psychiatric illnesses became a little clearer when the researchers looked at the family histories of the 62 alcoholic probands. Here they found a statistically significant excess of mood disorder in siblings. Moreover, mood disorder was the only illness aside from alcoholism itself seen significantly more often in first-degree relatives of alcoholics as compared to matched controls.

Thus, alcoholism was seen very often in families of patients with mood disturbances, and mood disorders appeared in families of alcoholic patients. An association between the two seemed possible, and the possibility was strengthened by the fact that the two illnesses appeared together in one other context, suicide. The St. Louis investigators reviewed a number of suicide studies; they also undertook one of their own. They concluded from all the various kinds of data they surveyed that death by suicide was characteristic of both alcoholism and mood disorder.

If there is a meaningful association between alcoholism and mood disturbances, what might its nature be? For example, should the alcoholic syndrome be considered symptomatic of underlying affective disorder? The researchers made a preliminary approach to these important questions through analyses of the sex differences they had uncovered in family histories.

They calculated the morbid risk for alcoholism and for affective disorder in brothers and sisters of 426 probands with affective disorder. Brothers and sisters of male probands and sisters of female probands all showed approximately the same risk for affective disorder, about 20 percent. But there was a marked difference for brothers of female probands, whose risk was only 7.4 percent. At first it appeared that the deficit of affected brothers of female probands might be made up by increased risks for alcoholism among brothers of both male and female probands. This did not appear to be a valid inference, however. The researchers concluded, therefore, that "with an illness as prevalent as alcoholism, some of the brothers must be considered to have alcoholism as an illness separate and apart from affective disorder. For what proportion of these this is true is not known."

The investigator and his colleagues are still very interested in questions about the association of alcoholism with psychiatric illnesses, particularly mood disturbances. They now have a study under way in which the family histories of 200 alcoholic probands are being thoroughly analyzed. "We are trying to judge when the alcoholism in the proband is associated with affective disorder, schizophrenia, obsessive-compulsive illness, or whatever," Doctor Winokur explained. "Then we will look at the family members and separate them into diagnostic groups, too." This study may illuminate new aspects of the alcoholic syndrome because it is the first large family history investigation to include a substantial number of female alcoholics.

The Way Ahead

Disorders of mood are terribly destructive illnesses. Deep depression directly threatens the victim's very life in that suicide may seem his only escape. Too tragically often, he performs this fatal act before medical care can help him out of his despair. The person locked in the madness of a manic attack can literally burn himself out in prodigious and unstoppable outpourings of energy unless he is restrained. And who can even begin to measure the toll of human misery borne by the victims and their families, and the years of creative human activity lost to the community? The number of people afflicted with serious disorders of mood is two to four times the number of those suffering with schizophrenia, often considered the greatest scourge of man's mental integrity.

There are many researchers in clinics and laboratories, using the knowledge and procedures of virtually every discipline in medical science, trying to understand the causes of the affective disorders and to work out more effective treatments for patients. Differentiation is the one problem to which all these problem-solving efforts ultimately relate. Doctor Winokur and his co-workers went at the problem rather directly and, using data gathered in a long series of systematic studies, formulated the hypothesis that at least two types of primary affective disorder may be distinguished on genetic and clinical bases. The hypothesis has great heuristic value; it is a promising place to start from in the continuing search for understanding. Doctor Winokur has urged that workers doing clinical studies of affective disorders—metabolic, biochemical, physiological, psychopharmacological—take into account the possibility that separate illnesses are represented in any large group of patients suffering mood disorders. He has suggested that the following guidelines be a minimum basis for separating patients—

1. Bereavement as a model for reactive depression.
2. Secondary affective disorder (Secondary to hysteria, anxiety neurosis, alcoholism, etc.).
3. Manic-depressive disease.
4. Depressive disease.

The investigators are continuing their studies of affective disorders along the lines of their previous work. They are just finishing the preparation of a book containing a complete report of all the studies described here, as well as some more recent data. They are also in the midst of a full-scale study of depression-only probands. While Doctor Winokur thinks that manic-depressive disease is a single illness, he thinks it likely that the depression-only group is composed of more than one illness, and he hopes to begin separating this group into homogenous subgroups.

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HYPNOSIS:
A RESPECTABLE TOOL FOR MEDICINE AND PSYCHOLOGY

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Doctor Hilgard has helped to strip hynopsis of a great deal of its mysticism, thus helping to reintroduce hypnosis into the fields of psychology and medicine. Through many years Doctor Hilgard has explored the nature of the hypnotic phenomenon and hypnotic susceptibility, seeking the kinds of experiences and performances that characterize the hypnotized person, and predict who, indeed, can be hypnotized. The grantee and his associates have devised a scale of hypnotic susceptibility to trance induction. What qualities differentiate a susceptible person from one who cannot benefit from hypnosis? Through studies of personality and development performed on individuals exposed to the susceptibility scales and graded for their hypnotizability, the grantees are attempting to answer this question. Is the deeply hypnotizable person genetically special or was he encouraged to use his mind and feelings in a particular fashion in childhood? In their long and careful program of studies, the Hilgards and their associates have begun to answer some of these profound questions about the use of the mind and the value of the phenomenon we call hypnosis. Current studies exploring indicators of pain and alterations induced by hypnosis show that the medical world is overlooking an important instrument in pain control. The laboratory has demonstrated this by using hypnosis with some patients with terminal cancer and migraine headaches.

> Comic, exciting, amazing by turns, by midnight they were still in full swing; we ran the gamut of all the phenomena this natural-unnatural field has to show, from the unimpressive at one end of the scale to the monstrous at the other.
>
> "Ah, bravo!" answered Cipolla. "I like you, giovanotto. Trust me, I've had my eye on you for some time. People like you are just in my line. I can use them. And you are the pick of the lot,

that's plain to see. You do what you like. Or is it possible you have ever not done what you liked—or even, maybe, what you didn't like? What somebody else liked, in short? Hark ye, my friend, that might be a pleasant change for you, to divide up the willing and the doing and stop tackling both jobs at once. Division of labour, sistema americano, sa! For instance, suppose you were to show your tongue to this select and honourable audience here—your whole tongue, right down to the roots?"

"No, I won't," said the youth, hostilely. "Sticking out your tongue shows a bad bringing-up."

"Nothing of the sort, retorted Cipolla. "You would only be doing it. With all due respect to your bringing-up, I suggest that before I count ten, you will perform a right turn and stick out your tongue at the company here further than you knew yourself that you could stick it out."

He gazed at the youth, and his piercing eyes seemed to sink deeper into their sockets. "Uno!" said he. He had let his riding-whip slide down his arm and made it whistle once through the air. The boy faced about and put out his tongue so long, so extendedly, that you could see it was the very uttermost in tongue which he had to offer. Then turned back, stony-faced, to his former position.

"Mario and the Magician", Thomas Mann.

Background

Nightclub performers and charlatans have helped to give hypnosis an unhealthy and disreputable aura that has prejudiced modern academicians and doctors against using what is a most valuable method for therapy. In primitive times, however, the priest-doctors were practicing hypnosis in many of their magic utterances. As Plutarch commented, the great healer, Pyrrhus of Epirus, used to touch patients with his big toe and cure colic. The Romans used a healing method known as "the laying on of the hands," and indirectly from this practice of suggestion comes the word for medicine: "Medicus," the Latin name for a doctor, was also the index finger. One need only read of the miracle cures of the Middle Ages or see the piles of crutches abandoned by the crippled at the shrine of Lourdes to realize that the power of suggestion has been a primary implement of medicine throughout most of western history.

Paracelsus, a 16th century doctor, who pointed out that miracle cures were not gifts from the supernatural but the work of human beings, was repaid for his common sense by vituperation and he was hounded from city to city. In the late 18th century, however, a rich and respected Viennese doctor, Franz Anton Mesmer, reintroduced both hocus pocus and hypnosis in medicine. By having hysterical or otherwise worked-up patients hold on to iron rods connected with a tub of water and iron filings, while he made gestures at them with his hands, Mesmer believed that he caused forces of magnetic currents to emanate from his hands. Thus began the myth of the hypnotist as a kind of supernatural man. Controversy over the nature of the phenomenon raged in France into the 19th century although, toward the end of the century, with the blessing of the great neurologist Charcot and the respectable Bernheim, it became widely used. Freud, impressed with the use of hypnosis by Charcot and Bernheim, immediately saw it as "mighty psychic forces which nevertheless remained hidden from human consciousness." He realized that it was a capacity within the hypnotized person, not within the hypnotist. He used hypnosis to evoke memories, or reduce symptoms, but became dissatisfied and preferred free association for the re-evaluation of the past. For 50 years, hypnosis was a virtually unused tool. During the second world war, battered seamen and soldiers suffering from paralysis or blackouts needed instant treatment in situations that afforded neither drugs nor time for psychiatric therapy. Capable psychiatrists used hypnosis on the battlefield to induce sleep, to treat war neuroses, and to substitute for analgesics and anesthesia during surgery. Research on hypnosis was stimulated by a number of men who were then young doctors—among them, Fisher, Grinker, Spiegel, Erickson, Gill, and Farber. Despite their exiciting wartime discoveries, the postwar uses of hypnosis were limited mainly to obstetrics and dentistry.

What Is Hypnosis?

Women who take courses in natural childbirth do not realize they are learning a technique of self-hypnosis. Informal hypnosis is with us all the time, but under other names. The D.A. who elicits a confession, the parent who frightens a child and instills a belief, the teacher who inculcates with an ineradicable dynamism, the priest, the police, and the military officer who indoctrinates notions of patriotism or heroism under duress and fear—all may practice the art of hypnosis to some degree. Hypnotic phenomena can be found in the theater, and in the relations between men and women—perhaps most clearly in those mutually spellbound couples so in love that they are unaware of their surroundings. Religious rites and magic rely heavily upon hypnosis. The magic powers of tribal priests must indeed stem from the ability to encourage trance in their followers. Surely this has been seen in the African initiation rites of subincision, in which young boys endure surgery with stones, a procedure that evidently leaves them almost unaffected, but which is so painful to Western eyes that movies of these rites have been used to cause stress and anxiety in a multitude of laboratory experiments. The observing Westerner clearly empathizes with a pain that the entranced novice does not feel.

In spite of its ubiquitousness and long medical history, hypnosis is still difficult to define—maybe because we have no vocabulary to discriminate among our many states of consciousness. One thing hypnosis is not: a form of sleep. It is a waking trance, as demonstrated by electroencephalogram tracings and other physiological signs from people in trance.

The behavior and experiences of people in hypnotic trance have been compiled to define hypnosis. Typically, it is a state of altered sensory awareness. A person narrows his concentration, ignoring distractions around him and idle thoughts, perhaps hearing only the voice of the hypnotist. It might be called a state of highly focused concentration, a redistribution of attention, or—as Doctor Hilgard prefers to say—a state of selective inattention in which one is inattentive to almost all the surrounding realities.

Within a trance state, some people can be "regressed" (or told to experience themselves at an earlier age) and will actually speak as a child of 4, for instance, reacting as a 4-year-old would to a lighted match or a standard word test. Vivid hallucinations can be produced in trance. People can be told to look at the person to their right, and also see the same person directly in front of them. They can experience distortions of body, and of their past. Dr. Herbert Spiegel, a New York psychiatrist and pioneer in medical hypnosis, has filmed an experiment in which a young, politically liberal man was told, under posthypnotic suggestion, to accuse the major TV networks of Communist infiltration. Under interrogation by NBC reporter Frank McGee, this man offered detailed fictional evidence of Communist infiltration, even citing names he saw on a blank piece of paper. Later, brought out of trance and posthypnotic suggestion, he viewed the film and expressed astonishment: typically, he had not remembered anything that had occurred. This kind of role behavior suggests that one should not take at face value legal confessions that were elicited under formal or informal hypnosis. Lack of memory for the events during trance—even if a person has been taken on an emotional and revealing trip of his own past—remains one of the curious attributes of deep hypnosis. Perhaps, as some have suggested, the person in trance resembles the sleepwalker who wanders around with eyes open, staring blankly, perhaps wearing an expression of anger or fright, and who recalls almost nothing when awakened.

It is a time when conscious, critical controls have been relaxed and distractions are excluded—a time when the susceptible person responds directly to the "programming" of the hypnotist. Some insight into the nature of the trance has been obtained from thousands of interviews with experimental subjects who offered their subjective descriptions of the trance experience. Asked to describe their feelings about hypnosis, a great many of the students said they had loosened the chain of ties that held them to reality. Some felt that their bodies were floating or bloating up to the size of the earth. Others recalled blankness or sensations of spinning. Said one, "Hypnosis is just one thing going on, like a thread—focusing on a single thread of one's existence—". Others felt that the hypnotist's voice entered and filled their heads or that they had sunk to the bottom of a dark well and were totally inside of themselves, that their bodies were not touching the environment. These unusual states of awareness were produced in hypnotic trance in a normal people—not caused by pain or illness or neurotic needs or hysteria. At the extremes, as witnesses of voodoo deaths or magical paralysis would agree, the very hypnotizable person demonstrates in much more vivid fashion what the rest of us experience in lesser degree. The differences in intensity from mild to overwhelming involvement cannot be explained in terms of voluntary cooperation but must rest upon ways in which suggestions are actually translated into the nervous system.

The Stanford Laboratory of Hypnosis Research

For well over a decade Doctor Hilgard and his associates have been studying various aspects of hypnotic phenomena, producing a volume of work that can be cited only briefly here. The physical context of the work and the nature of the volunteers are worth describing, for they effectively counteract any of the aura of the arcane or magical in which popular mythology always cloaks hypnosis. The laboratory itself is in a sprawling wood framehouse, typical of California suburbia some 25 years ago. It is a block away from the Stanford campus and has an atmosphere of informality and bustle. On the second floor of Hawthorne House, experimental rooms are equipped with cold pressor baths, instruments for measuring EEG and physiological changes. They are comfortable small rooms, equipped with reclining lounge chairs for volunteers. The offices of the main building and its backyard annex house graduate students, staff, and a constant trickle of distinguished visitors who work for a while in the laboratory.

The Subjects

Beginning in 1957, Doctor Hilgard began to grapple with the question of hypnotic susceptibility and how to refine measurements. He and his associates began studying, testing, and interviewing over a thousand college students. They were screened so that they represented a normal population. In later years, some were drawn from ads at

Stanford or were high school students on summer vacation. Originally, however, most experiments were performed with students who were not really volunteers. They were Stanford psychology students who were fulfilling course requirements. They were known as "coerced volunteers," and at first some of them were unenthusiastic subjects. Interestingly enough, they ranked lower on tests of hypnotic susceptibility than did later groups who had freely volunteered for hypnosis. The so-called coerced volunteers were only one group. During the last decade, students and many other people from the surrounding community have contributed to this laboratory's pool of subjects, people who could be tested and retested many times on the evolving susceptibility scales. After they were categorized for degree of hypnotic susceptibility, they were invited to return to the laboratory for other experiments. The tedious task of rating people meant that the laboratory also had a pool of volunteers known to be highly susceptible subjects and with whom it would be possible to do dramatic experiments, such as exploring the analgesic effects of hypnosis upon pain.

In the course of refining the scales for measuring hypnotic susceptibility and exploring the nature of hypnosis, the experimenters questioned the subjects about many aspects of their lives and beliefs. Intriguing correlations appeared between interest in reading, adventuresomeness, and hypnotic capabilities. These were pursued in a study involving some 639 students and 1,200 interviews. Other groups of volunteers were useful in a study of a possible age factor in hypnotizability and also a genetic factor. A large group of families with twins was drawn into the laboratory. Some 88 families and 98 sets of twins had been attracted by advertisements in twin clubs, whose national office has made it a point to cooperate with scientific researchers. In the course of the time study it was indeed found that hypnotizability reaches a peak in childhood between about 8 and 11 years, and that it declines in adolescence and maturity.

Although all the subjects in these experiments have been well educated, and basically without superstition, most of them had read some popular literature about hypnosis. Despite the matter-of-fact atmosphere of the laboratory, one student commented, "* * * no matter what you say, hypnosis is somehow an occult thing."

In testing for susceptibility, one task required the volunteer to dream about what hypnosis meant to him. Many reported dreams about witches or strange bearded sorcerers or alchemists. A mythology is embedded in our culture that we absorb from the time we are in nursery school throughout life—from stories, picture books, comic strips, sensational books, and nightclub acts. Knowing the prevalence of this mythology, the experimenters were amazed that most subjects reacted in such a mundane fashion to the first trance which they experienced.

Judged by mood tests beforehand, the subjects were well prepared, for they were very relaxed. The procedure was designed to make the experience easy, comfortable, and without fear. Although many people who have not personally experienced hypnotic trance fear losing control of themselves, some volunteers remarked: "I never felt at any time in the test that I was not in control. If the building had burned down, I felt I could have stood up and walked out of the building." Many were surprised and disappointed that they didn't have a more colorful experience.

Out of the 1,000 inductions only about four or five people endured some curious disruption or emotion. One student wept, yet could not explain his tears, and later went into trance with no reaction. Another lapsed into a kind of panic, sobbing and moaning. Yet when he was aroused from trance he became calm. Very rarely did a person react to trance induction by shaking, becoming rigid, depressed, or cataleptic. When an abnormal reaction did happen, suggesting some latent problems, the volunteer was referred for psychiatric consultation with Dr. Josephine Hilgard. These adverse reactions to trance induction or after hypnosis were so rare that the experimenters had no evidence that experiments with hypnosis entail any more dangers than a variety of behavioral studies in the laboratories of psychology.

A great many people fear hypnosis because of myths that claim it is a sign of weak will or self-surrender. Thomas Mann described this in "Mario and the Magician,"

> The capacity for self-surrender, he said, for becoming a tool, for the most unconditional and utter self-abnegation, was but the reverse side of that other power to will and to command.

Many people still hold a notion of a hypnotist as a person with special powers, and conceive of posthypnotic suggestion as a pervasive, possibly life-long, influence. People fear that hypnotic experience will arouse early memories of fright and that a person will become disorganized, deteriorated thereafter.

Are There Hazards in Hypnosis Research?

Doctor Hilgard and members of the laboratory have attempted to ascertain whether there is any reason to be uneasy about hazards in hypnosis. During 1961 they did followup interviews with some 220 university students, none of whom was a patient in therapy. Each had at least two sessions of hypnotic induction in the laboratory.

Perhaps one of the most interesting findings of this study was that headaches and struggling were sometimes experienced during hypnotic induction: it reminded some of the students of times when they had been given anesthesia as young children for tonsillectomy. Those subjects with adverse reactions after hypnosis or during induction also recalled that as children they struggled against anesthesia for tonsillectomy and afterward suffered from headaches and nausea. A Westchester, N.Y. pediatrician who uses hypnosis with patients has noticed that whenever a child cannot close his eyes or has sleep problems there is usually a bad tonsillectomy in his background. Usually the frightened and struggling child was put under anesthesia still struggling and later awakened in pain. Hypnosis occasionally reawakens a frightening early experience, which means that hypnosis should not be used casually or for entertainment—and somebody should be standing by in case of an emotional emergency. Such cases have been rare, indeed. In a study of 220 university students who had been hypnotized in the laboratory, it was found that only 26 had any peculiar aftereffect. Moreover, within this group a large percentage remembered struggling during the anesthesia preparatory to a tonsil operation, and trance induction reminded them of that experience.

Hypnotic Susceptibility

It is not the hypnotist, but the hypnotized, who has the capacity for mysterious plunges into the past or into imaginative roles and sensations. In evolving scales to measure this capacity, the grantee inevitably wondered whether it varies, like IQ or athletic talent. Can hypnotic susceptibility be modified and improved with practice? In 1963, the laboratory studied a group of subjects who seemed to fall in the middle range of hypnotizability. The researchers attempted to change their subjects' hypnotizability, but concluded they failed. The early studies indicated that hypnotic susceptibility was very resistant to modification, but later refinements have had greater success, particularly in increasing the hypnotizability of those who were already moderately hypnotizable.

Many studies of hypnotic susceptibility have been conducted by other researchers, but each researcher has devised his own induction techniques. This meant each investigator used different criteria for judging individual differences in susceptibility; thus the differences between the researchers made it impossible to compare their results. In 1961, the Stanford laboratory evaluated a group of students according to a number of different scales of hypnotic susceptibility. Although the subject's susceptibility varied, depending upon the scale, there was enough consistency to justify standardizing some well-defined scales. Beginning in the early 1960's, several American research groups made an effort to produce comparable data and adopted the Stanford Susceptibility Scale for evaluating subjects.

A person's hypnotic susceptibility is gauged by a number of tests. After trance induction, he may be told that his arm is immobilized—and then asked if he can move it. His fingers are locked: can he pry apart his clasped hands? If he is instructed to hallucinate a fly, buzzing around the room, does he swat at it? Can he be given posthypnotic suggestion—for instance, to turn a chair upside down—and will he do this, explaining irrationally that he wanted to see a label on the underside, or offering an equally outlandish excuse? A great variety of criteria are used to rate a person's susceptibility.

Each of these tests raises interesting questions about the origins of the person's behavior. Could it be a form of compliance or conformity in a highly motivated experimental situation?

Is the Phenomenon Hypnosis?

A number of experiments were designed to reveal whether trance behavior was indeed produced by a special state of consciousness we call hypnosis or by compliance. People were tested on different days under varying conditions. One day they would be told that they would not be hypnotized but would be asked to imagine certain things. Their responses were examined. On subsequent days they were asked to do the same tasks after hypnotic induction. These tests, while far from unequivocal, suggested there was some point at which hypnosis produced a far stronger response in certain individuals than did mere imagining.

In 1965 Doctor Hilgard and his associates told a group of women subjects that they were going to discover the real extent of their strength. The women students were hypnotized and instructed: "Today you will think of yourself as stronger and more capable. You will actually become stronger and have greater endurance. You have an unusually strong desire to do well. You will do extremely well. In a moment I'm going to count from one to ten. As I count you will actually feel yourself become stronger and stronger." The women now held heavy weights in the air and were timed. Could they hold the weights as long without the instructions that motivated and spurred them on? By varying the instruction, the experimenters indeed saw that all subjects did better when exhorted and motivated than they had under ordinary instructions—even if the instructions were delivered in trance. Given a pep-talk within hypnotic trance the girls would hold the weights up almost 3 minutes, yet waking subjects held the weights up for only 2 minutes. Despite the comparative muscular weakness of women, the women performed quite as well as the men had done in an earlier study.

Apparently both inhibition and movement are very much influenced by the mode of communication and motivation. The "unusual strength" of the motivated women bears on other experiments which purport to examine only the psychophysiological responses of a person. Many studies actually embody hidden motivating factors that influence the response of the subject. The cooperation of a person going into hypnotic trance is one example. Taking motivational biases into account, this laboratory has explored every variety of phenomena thought to be special to hypnosis.

Can the Hypnotized Person Control Himself?

During the early 1900's experimenters used hypnosis in attempting to understand the mechanisms of neurosis. They produced miniature anxieties, or obsessions, during hypnotic trance, and many of the great innovators recorded their own experiences. One question in everyone's mind was—Could a hypnotized person *resist* commands? Bleuler recalled, ". . . When I was required to perform an act, I was able to struggle against it for a long time. At length, however, I carried it out, partly from want of willpower to resist it, just as one gives in to a reflex which costs a great effort to resist." Seen from outside, as in Mann's "Mario the Magician," the hypnotized person seems to have suspended all volition.

> "One saw it waver, that strength of purpose, beneath the repeated summons * * *. If I understand what was going on, it was the negative character of the young man's fighting position which was his undoing. It is likely that not willing is not a practicable state of mind; not to want to do something may be in the long run a mental content impossible to subsist on. Between not willing a certain thing and not willing at all—in other words, yielding to another person's will—there may lie too small a space for the idea of freedom to squeeze."

Until recently there were many contradictions in experiments to test the "will" of the hypnotized person. Doctor Hilgard and his associates, typically by placing their subjects in a most neutral context, were able to compare the behavior of 12 volunteers who were given bizarre instructions in trance with their behavior on a second trial when they had been instructed to resist. Although the subjects still went into trance, and followed some of the instructions, they were able to counteract other instructions. Some said they deliberately did not pay attention; others said they used sheer effort or determination; and a few claimed they used auto-suggestion to resist—but resist they did.

Hallucinations

Could a study of subjects in a laboratory reveal something about the nature of hallucination—the experience of the mentally ill? Is there a measurable difference in brain function during hallucination that might be observed in the brain wave tracing of the EEG? The laboratory of hypnosis is an ideal place to investigate such questions.

A person in trance can perceive and interact with imaginary people and will erase suggested words from an altogether empty blackboard. This hallucination ability is a fair test of the degree of trance. A person in trance can be told to look at a wall clock and not to see it. He can be told that one of the hands is missing. When asked the time, the person will not be able to give an accurate answer. The Stanford laboratory has compared extremely susceptible, moderate, and not susceptible subjects on a number of these criteria in order to find the relationship between the ability to see hallucinations, for example, and susceptibility to trance. In one instance, subjects were told to close their eyes and listen to music on a non-existent record player. Sometimes subjects were told to hear a nonexistent voice over a nonexistent PA system and then were asked to repeat a nonexistent question uttered by this imaginary voice. In other experiments people were asked to hallucinate taste and smell—sniffing a cotton saturated with something as strong as ammonia without smelling it.

Most people in the waking state can usually have a hallucination of sorts, following a suggestion. Indeed, the suggestion that there is a faint smell of burning often sends people rushing into the kitchen—still, hallucination is more easily studied in trance states. What happens in the brain of a person who is told not to hear something? Tentative answers have come from a click experiment at Stanford. Subjects were told they wouldn't hear a clicking sound that continued throughout their trance. Neurophysiologist Karl Pribram, and psychologist Gordon Bower, analyzed the electroencephalograms taken during and out of trance. The click, while "unheard," did reach the cortex, judging from the EEGs. The EEG pattern (the so-called evoked potential) in response to the click was, however, different in hypnotic trance than in the person's normal waking response: it was delayed and attenuated. This suggested that the bioelectric potential generated by the brain's response was much lower than it would have been if the person just listened to the clicks in an ordinary waking state. A reduction in potential suggests one way in which people "control" their own experiences and sensations by altering the responsiveness of their brain. Do hallucinogenic drugs act similarly, inducing hallucination in a manner like that of trance? One doctoral candidate in the laboratory, Dr. Bernard Sjoberg, showed that both LSD 25 and mescaline can produce increased suggestibility in the manner of hypnotic induction, although psilocybin had no apparent effect on suggestibility. In a study of 24 volunteers, Sjoberg compared hypnotic susceptibility during controlled experimental sessions and also at a different time after various drugs.

A hypnotic subject can be trained to condition himself to experience hallucination. This has been done in Japan. Clearly hallucinatory experiences are very subtle, not necessarily overwhelming, and they can be produced in a number of ways—by hypnosis, drugs, and conditioning, as well as by spontaneous and special states of consciousness.

Age Regression

Hypnotic return to an earlier age has been useful in psychotherapy and psychoanalysis when entire areas of the past had been blocked from a person's memory. Is a person role-playing when he acts 5 years old upon hypnotic instruction—or does he have the illusion that he is actually age 5? In preparation for a Stanford study of regression, volunteers were carefully screened. They were asked to recall a recent meal both during waking and under hypnosis. In waking, most people were unable to recall any details of a meal, but in hypnosis they described both food and conversation in detail. They were asked to sign their names and then told that they were very young—too young to have learned cursive writing. Now they were asked to sign their names again.

One volunteer was a boy who had been raised in China. He began to hold the pencil as if it were a brush, and wrote his name in Chinese characters. He was amazed when he was brought out of trance and confronted with his name in Chinese. He had written in a square style he had been taught at a very early age and had forgotten, a style different from the characters he used in his present life.

Only a few highly susceptible people were good subjects for age regression. Were they simulating or role-playing? In some experiments volunteers were asked to simultate or imagine they were regressed in age. The attitude and language of the experimenter had a good deal to do with how convincing the performance was. If the experimenter talked to the subject as if he were a 5-year-old child, this seemed to influence the subject to become more childlike. On the other hand, the experience of age regression was occasionally very startling. One college student had been brought up in Finland where he learned a rare Finnish-Swedish dialect. When he was 5, his father died and the family moved to America. After that he hardly ever heard the dialect. By luck, there was another Finnish student at Stanford who understood this dialect. He helped to test the volunteer. When the experimenter suggested age regression, the volunteer was actually able to understand his childhood language better than on pretest during waking. In trance, when regressed, he answered a number of questions that he had found totally incomprehensible in the waking state.

Who Is Susceptible to Hypnotic Trance?

Do attitudes and expectations about one's own hypnotizability have an influence on trance ability? Questionnaires given to Stanford student volunteers disclosed no simple correlation. Girls who gave very positive answers—expecting a high suceptibility in themselves—did indeed turn out to be correct; but the boys' attitudes and expectations said little about their trance abilities. Moreover, when asked to predict their susceptibility, the subjects did poorly.

Doctor Hilgard and his associates have undertaken a huge series of studies to predict hypnotizability and find its correlates. They have found that batteries of projective tests and personality tests gave no predictions. Behavior tests used by other researchers have not succeeded better than personality inventories in yielding correlates of hypnotic ability. As Doctor Hilgard has put it,

> Many conjectures about hypnosis are highly plausible, so that it is something of a shock to put them to the test only to find that practically none of the plausible conjectures can be proven to be true. There ought to be relationships to anxiety, to social desirability, to conforming tendencies, to social influence ability, to attention and so on, but such relations as we find are all very low and unstable, except the criterion of hypnotic susceptibility itself which is remarkably stable.

If no personality index, no one trait could be correlated with susceptibility, could there be a configuration of interests and activities that might be paths to the hypnotic mode? Doctor Hilgard and her colleagues began to accumulate evidence that involvement in reading, the memory of imaginary companions in childhood, abilities to be immersed in adventure or nature—all were symptomatic of the hypnotically susceptible person.

Over a period of years and thousands of interviews, portfolios were developed on each subject. The procedure involved interviews before the first hypnotic induction to see if the researchers could predict in advance which subjects could be hypnotized. Then the subjects went through a standardized hypnotic induction and test routine on which they were rated. In many cases a followup interview allowed the researchers to explore their original predictions—and see why they had been correct or wrong.

Over 600 students and 98 entire families were studied. Both parents and children were rated for trance ability and interviewed. A factor analysis was then performed on all the items to see which groups seemed to predict the highly hypnotic subject.

Although the interviews entered the usual domain of developmental influences of punishment in childhood or identification with parents—the study of highly hynotizable subjects suggested an examination of imaginative involvement. What are they like? How do they evolve in a child's growing up? Dr. Josephine Hilgard wrote,

> "As we began to look into these imaginative involvements we tried to understand their nuances so that we could distinguish those deeply involved from those superficially interested. In fact, we entered an almost uncharted chapter of psychology. We were

no longer studying merely some of the indicators of hypnotic susceptibility, but something deeply coloring the lives of those who had the capacity for involvement."

Reading

"Hypnosis was like reading a book," said one student. "It's stronger, in a way, than reading." As interviews revealed, interest, involvement, even addiction to reading did not predict a high trance ability. The *manner*, the quality of reading involvement varied considerably, as two examples illustrate.

One girl read voraciously throughout childhood. After age 8 she often read into the wee hours of the morning, yet she had no involvement in the roles of fictional characters. "The closest I ever came to trying to imagine what it would be like to be someone else, is trying to imagine what it would be like to be someone else." She was not highly susceptible.

One boy said, "I felt I was there, looking out through the character's eyes." Another said, "I identify myself with the character in 1984, with Winston Smith, who was tortured at the end, fearing rats . . . I felt the fear that he felt as it came closer, closer."

These responses typified the highly susceptible students. Often the students who read with deep immersion and involvement, rather than as an escape or for knowledge, had developed reading habits to counteract loneliness in childhood, and had been encouraged by the example of a parent.

Because the highly trance-able person identified with roles in fiction, it seemed likely that dramatic students should show high susceptibility. However, students in the drama department turned out not to be particularly high on the scale—but actors, also, vary in the extent to which they portray roles by technique and by emotional involvement.

Religion

In a study of 187 students there were 14 from a very religious home who held firm religious beliefs. All of them averaged very high on the susceptibility scale. One was a minister's daughter; one had been an altar boy and had sung in choir; one had actually tried being a Methodist preacher. All of them were free of conflicts about their faith. One girl, a convert, typified religious attitudes that did not jibe with high trance ability. She sought philosophical reasons for living—the purpose of life. Otherwise, religious experience, like hypnosis, suspends the usual reality testing, and acts of faith are precisely acts of receptivity to authority.

Nature Appreciation and Sense Experience

Wordsworth, in 1798, wrote some lines above Tintern Abbey that reflect that particular kind of sensory pleasure and absorption in nature that seem to be properties of highly hypnotizable people. It is interesting that these capacities for hypnotic trance are at their peak in childhood.

> I cannot paint what I then was. The sounding cataract
> Haunted me like a passion: the tall rock,
> The mountain, and the deep and gloomy wood,
> Their colours and their forms were then to me
> An appetite; a feeling and a love * * *
> * * * That time is past,
> And all its aching joys are now no more,
> And all its dizzy raptures * * *
> For I have learned
> To look on nature, not as in the hour
> Of thoughless youth; but hearing oftentimes
> The still, sad, music of humanity * * *

Like the nature poet, many of the highly susceptible students described their enjoyment of sensory experience. "In the mountains I would join in a summer storm, running uphill watching the storm approach. The wind always blew in Montana. I loved it. I would carry my cello over my head and pretend it was a sail."

Imagination and Imagery

How can one define the kind of vivid fantasy and imagination that seemed to characterize the highly hypnotizable subject? In one attempt, the volunteers were given 35 tasks of sensory memory that included vision, hearing, touch, kinesthetic sense, smell, and organic sensitivity. An item would ask, for example: "Rate the vividness of your image of the sun as it is sinking below the horizon." The rating scale had been established and there was some correlation between susceptibility and the ratings. However, some of the people high in imagery were not very susceptible.

Interviews showed no real relationship between creative performance and hypnotizability, perhaps because craft becomes important in the artistic execution of ideas.

Neuroticism

Ratings accomplished by interviews indicated that neurotic traits were not favorable to hypnosis. Of 184 volunteers, the normal outgoing persons were more likely to be hypnotizable than were the troubled and withdrawn. There is a certain plausibility to this, since fear, anxiety, and resistance would interfere with trance induction.

Imaginary Companions

Sixty-six out of 400 vividly remembered having an imaginary companion in childhood. Fifty subjects remembered enough to describe them: some were dogs, teddy bears, spiders, bears, lions, friends, even twin brothers. "The sprinklers in the yard were characters to me and I talked to them," said one boy. Five of the most hypnotizable subjects had had imaginary companions who acted as "consciences" and were not always pleasant. "I guess I relieved my own aggressiveness through my imaginary playmate," said one girl. This is a relatively unexplored aspect of personality development, and opens all kinds of opportunity to investigate reactions to loneliness, guilt, confused identification, and creativity.

Adventure and Athletics

Venturers into the unknown, risk-takers, mental space travelers, and athletes numbered among the highly hypnotizable subjects. But they were distinguishable from other venturesome and athletic students who were not hypnotizable in the quality of their adventure pursuits. It was necessary to distinguish those who enjoyed the freedom and spirit of flying from the daredevils who were seeking applause. The skier seeking exhilaration, and enjoying the wind in his face and speed, differs from the slalóm competitor. Some venturers would go in for drug experiences—LSD, mescaline—in order to know themselves better; and others were mountain climbers, or skin divers, or a cave explorer who enjoyed the mystery of deep dark spaces.

Daring as some of their exploits, they differed from the non-hypnotizable subject who had enjoyed thrilling his friends by running on rooftops, or the woman swimmer who wanted to be hypnotized but could not: "People who are competitive," she said, "are far from imaginative. You realize what you are fighting; it's the reality of the struggle. Imagination and competition are mutually exclusive. In competing the whole world around you is more real. In competitive sports you are taught never to take your opponent for granted. You keep a critical eye on everything."

> "To be hypnotizable it is necessary to be able to enjoy a certain amount of departure from reality, something not permitted the competitive athlete, the day-to-day scientist in his laboratory, or the hobbyist with an obvious product to be made. To be hypnotizable one has to be somewhat passively receptive, giving free play to imagination; this is not the way to achievement on the playing field, to analysis of data in the laboratory, to construction of violins or breeding of plants. While all of the activities are of the kind in which the participants may become deeply involved, involvement itself is not enough; it must be of a particular kind."

Some people have esthetic interest in nature while others are committed to categorizing and laboratory work. A few can do both. Any notion of personality integration must permit this shifting of gears.

Imaginative involvements have been studied, one at a time, reading, drama, creative activities, childhood fantasy, religion, esthetic interest in nature, venturesomeness, athletics. However, in analyzing responses to interviews and their relationship with hypnosis, many inter-correlations were made. The subjects with top ratings in any one of the areas of imaginative involvements were almost always in the upper half of the hypnotic scale, but they were not consistently at the top of the scale, so that involvements did not tell the whole story. Interactions between other aspects of personality and imagination were too subtle to be caught in the interviews and quantified.

Hypnotizability as a Result of Childhood Background

Is trance ability a result of the unrestrained, natural ability of all children—or is it produced by certain family configurations and developmental events?

The grantees have attempted to search out answers by a variety of questions. They sought information about identification with parents—of the same sex as well as opposite sex. How much did the child interviewed resemble his parents? Did a child pattern himself after a parent, such as a father who flew planes, or was a reader, or a musician. Worker, recreation, temperament, and other attributes were explored and interesting relationships observed, but none revealed significant correlations with susceptibility to hypnosis. If anything, higher hypnotizability seemed associated with identification with the parent of opposite sex. Children who identified with neither parent in work or temperament were unlikely candidates for hypnosis. One possibility is that the highly hypnotized child may indeed be given informal hypnotic suggestion by his parents and remains, so to speak, in a lifelong state of readiness for hypnotic-like experiences.

Punishment

Students (187 of them) were asked to rate the severity of childhood punishment as they remembered it. Their scales revealed an interesting trend. About a third of the highly hypnotizable students said they recalled very severe punishment as children. None were from cold and punitive homes, but had warm and loving parents who were nonetheless strict and who seemed to inspire a lasting conformity to authority. However, one of the students who did *not* become hypnotically susceptible was a competitive athlete whose father had used a strap on him until he became self-reliant. Severe punishment, alone, was not sufficient background for the good candidate for hypnosis.

The way in which strict discipline may induce conformity, and with it hypnotic susceptibility, was examined by studying the background and hypnotizability of children in kindergarten and also by studying the same kinds of youngsters in high school. The researchers hope to make subsequent tests on some of those children actually studied earlier. These elaborate studies are corroborating a relationship between hypnotic responsivity and early childhood punishment, in homes where the children had good relationships with one or both parents.

Motivation

Out of the 184 students intensively interviewed, the subjects who wanted very much to be hypnotized were predominantly in the upper half of the susceptibility scale. Only 25 percent fell in the lower half. The lower half included people who said: "I would hate to feel so vulnerable." "I'll cooperate and I won't resist intentionally, but I'm not terribly interested." "I'm a bit fearful, my parents have urged me to be careful." "One of my friends was hypnotized in public last winter and that was embarrassing. I'm not sure of my subconscious with a kind of ambivalence."

Some of the students who felt they could not be hypnotized became angry when they were, indeed, hypnotized. One boy was eager for hypnosis. "I think I can be hypnotized, I'm fairly suggestible." Despite his eagerness, he scored very low on a 12-point scale. In general, of course, the highly motivated subjects found it easier to interact with the hypnotist. Yet if their personality profiles showed that they had no other imaginative involvement, they usually kept their distance by an analytical attitude or caution and still were not able to be hypnotized.

Predictions made before hypnotic induction were matched with the susceptibility ratings and the interviews afterwards. Imaginary involvements and childhood punishment seemed to be the most influential factors in hypnotic responsivity. For a century it has been known that children are more hypnotizable than adults. Now some aspects of child rearing, as well, can be associated with hypnotic susceptibility. Imaginative involvements develop early in childhood and become important throughout life. This area is overlooked in developmental psychology although it offers a potential resource for education.

Perhaps child-rearing practice will be influenced by the finding that severe, early punishment produced not only a hypnotizable person, but somehow an individual who had respect for authority without being wounded by punishment. The successful use of punishment is not very well understood. If hypnotic experience is a criterion, there are many other experiences that serve equally well to support hypnotizability. Each personality has his own hierarchy. Only by knowing that personal hierarchy can one predict his susceptibility.

Applications to Psychotherapy

A person need not be highly susceptible to benefit from hypnotic kinds of therapy. At very least he must be able to sit quietly with his eyes closed. A case in point is a 41year-old man who came into the laboratory complaining that he had suffered bad headaches for the last 6 years. He was put on a daily program to sense body changes as a result of hypnotic suggestion. In four weeks he reduced the headaches and developed a method of his own for eradicating pain.

In some patients, symptom removal is not a helpful aim. They may obliterate from memory whole areas of their past. For them, hypnosis may be the best way of recovering repressed memories quickly. Patients who have developed transference may even become a little more hypnotizable than they might normally be.

Some patients need self-confidence more than anything. Hypnosis may be a means of offering pleasant thoughts and experiences to counteract negative emotion. Doctor Josephine Hilgard cites the case of an emaciated depressed man who refused to eat and was rapidly losing weight. Although insusceptible to trance, he had a passion for waterfalls, had travelled to many parts of the world to see them. He could lose himself in recalling and imagining them. Doctor Hilgard encouraged him to conjure up his favorite waterfalls and this relaxed him. With repetition he improved, began to eat and sleep, and was discharged from the hospital.

The techniques—enlisting imaginative involvement as in hypnosis—may be utilized in therapy even when hypnotic trance is impossible.

Pain and Hypnotic Analgesia

One of the most popular methods of natural childbirth requires concentration upon certain muscular movements during delivery. Delivery is anticipated as a series of muscular contractions rather than pain. A woman also can be given the suggestion that she will experience it as if sitting across the room watching the baby be delivered from someone else. Sometimes the methods are recognized as hypnotic, but usually the word hypnoisis is omitted. In the ability to remove pain, a person's hypnotic capacity becomes most important, a factor recently affirmed by studies in this laboratory. Although hypnotic susceptibility may remain stable for an individual during most of his life, it has been noticed that during war when fear and danger prevail, or during extreme pain, susceptibility will increase, perhaps due to enhanced motivation. For the most part, however, hypnotic analgesia is useful in surgery or childbirth only when the person has been found hypnotically susceptible beforehand.

During the last 2 years, the Stanford Laboratory of Hypnosis Research has added important new information to understanding hypnotic analgesia. Any investigator begins by wanting some definition of pain—that most elusive laboratory phenomenon despite its ubiquitousness in life. Correlates of pain have been sought in the electroencephalogram tracing, in skin responses, but neither peoples' expressions (which are biased by upbringing as well as genetic and age differences) nor any other responses have given measures of the intensity of pain. Within this laboratory, the investigators examined a number of possible physiological indicators of felt pain. Blood pressure seemed to parallel pain most consistently.

In the course of a number of studies, the volunteers were subjected to two different kinds of pain. One, known as the cold-pressor test, was caused as a subject held one arm in extremely cold water. The other, known as ischemic pain, was caused by a tight tourniquet on one arm.

The subjects in these studies were drawn from the laboratory's pool of volunteers, known for their susceptibility to hypnotic trance. When a volunteer merely sat in a comfortable easy chair and kept his arm immersed in a trough of icy water, he soon found it unbearable, and measuring instruments would show changes in pulse, blood pressure, breathing. If the trough of water were 10 degrees rather than 15, the person's endurance and physiological indicators revealed the difference in temperature. As one study of high school students revealed, pain and blood pressure changes were in proportion to the coldness of the water. The subjects gave a scale rating of their pain every 10 seconds (0 on the scale representing no pain. And 10 was the point at which pain became almost unendurable.)

The studies that followed put people through the same cold-pressor test under hypnotic suggestion that pain would be reduced. At another time the same people went through the cold-pressor test in trance, but without any suggestion.

Under hypnotic suggestion of analgesia, subjects kept their hands immersed for 40 seconds. Without suggestion, 20 seconds had been roughly the limit of endurance. Interestingly enough, blood pressure seemed to increase in parallel with subjective pain in the unhypnotized subjects. What would happen in the ice water under hypnoanalgesia?

> To our surprise, the blood pressure rises under hypnosis and is highest under the analgesic condition for both high and low hypnotizable subjects. It may be noted that particularly for the highly hypnotizable subjects the blood pressure rises before the hands are placed in the ice water so that the initial readings are above those of the less hypnotizable.

Blood pressure was not, then, a simple indicator of subjective pain, since the hypnotized subjects who felt no pain nevertheless showed increases in blood pressure. In parallel experiments with ischemic pain, the blood pressure changes were more thoroughly linked to subjective sensation.

Again, the carefully controlled conditions of the experiment allowed for a period in which the volunteer was coaxed into a relaxed state so that base line measures could be obtained of his normal pulse, blood pressure, and performance. This time, as the prepared and relaxed subject sat in an easy chair, he would squeeze a rubber handle while a tourniquet was tightly wrapped around his upper arm. For some minutes there would be no pain, but as pain rose, blood pressure also shot up. Eight individuals with usual blood pressures of about 115 showed blood pressures of about 135 by the time they were reporting intense pain.

After 12 minutes, one subject found it so unbearable the tourniquet had to be removed; yet another time, in hypnosis, he continued for 18 minutes without even reporting pain and showing no increase in blood pressure.

On subsequent sessions, when subjects were given hypnotic suggestion that there would be no pain, quite a few rid themselves completely of pain for 18–45 minutes. Now their blood pressures did not change at all. Subjects given trance induction without any suggestion of pain removal, and volunteers merely told to pretend or imagine themselves analgesic, offered a profound contrast. Their anguish was palpable. Not one of them could tolerate the agony long enough to provide an exact parallel with the hypnotic subjects. The impassive, hypnotized subject would sit there with the tourniquet in a semblance of ease and calm—while the subjects lacking a suggestion for analgesia or, indeed, without trance, wore their anguish on their faces and postures.

Why did blood pressure rise little or not at all in the volunteers hypnotized to reduce ischemic pain—yet show an exaggerated rise in the equivalently painless hypnotic subjects with their arms immersed in cold water?

Further research may help to answer this curious question. The investigators have conjectured that the blood pressure is a sign of reaction to stress. In the cold-pressor test there is no way of producing the sensation gradually; the moment that a person immerses his arm in water chilled to zero degrees, he experiences a physiological shock. It may be this that is reflected in the blood pressure increase. On the other hand, the ischemic pain, while torturous, rises very slowly, involving no sudden stress upon body systems. Thus, blood pressure may not rise when the person feels no pain. The relationship between blood pressure and pain may prove to be of considerable use for doctors, dentists, obstetricians, surgeons, and especially for those practicing emergency or battlefield medicine.

The piquing question, being pursued in further studies, is why hypnosis should allow subjects to endure cold immersion or tourniquets without pain, yet people told to fake hypnosis received no benefit from their imaginative effort. Pain can be dissected into a physiological and reactive component. In hypnosis, if certain types of sensory awareness are given priority, they influence the conduction of impulses from external and internal nerve receptors and the inhibition of sensation. Presumably the hypnotic subject is redirecting his autonomic nervous system to inhibit some incoming signals, while amplifyng others. In the instance of pain, perhaps he is emphasizing the quiescing activity of the parasympathetic part of the autonomic system. This might cause relaxation in the skeletal muscles, a sensation of weightlessness and even numbness. Although the mechanisms remain unknown, the ability to produce hypnotic analgesia is one of the most startling and useful capacities in medicine. Unfortunately, it has been used all too little, and few attempts to understand pain and hypnotic control have been conducted in the very places that are relevant—the hospitals. The understanding and use of hypnotic analgesia is likely to be enhanced by the recent work of the Stanford laboratory.

First of all, it has evolved well-validated scales of hypnotic susceptibility making it possible to test any individual and see whether he can profit from hypnoanalgesia. The recent matching of blood pressure and pain responses offer further clues that surgeons and anesthetists may use in gauging stress in patients, as well as in preparing patients to reduce surgical pain and shock after an operation. Studies of recovery and morbidity rates among children indicate that hypnosis and advance blow-by-blow preparation for surgery make a vast difference. Moreover, as studies of hypnosis reveal, callous treatment in which an individual, especially a child, is put under anesthesia reluctantly, may have lifelong ramifications.

As the behavior of blood pressure indicates, during cold-pressor pain further studies must be conducted into the nature of shock and the rapid onset of stress in mobilizing body responses: these may be the very conditions that provoke and augment pain. Although some studies of this sort will continue in the Stanford laboratory, many of them must be done in hospitals. As Doctor Hilgard remarked to the 1968 convention of the American Psychological Association,

> We have accepted this as part of the responsibility of our own laboratory and have undertaken the study of some patients suffering the pain of terminal cancer and others with migraine headaches. Clinicians are, at present, far ahead of our laboratories in the hypnotic reduction of pain, but the laboratory worker has a contribution to make.

The contribution of this laboratory has already been a great one; its susceptibility scales could become a part of the diagnostic equipment of every humane doctor. Moreover, therapists dealing with psychiatric problems might all benefit from some of the therapy techniques evolved by Dr. Josephine Hilgard. Information offering correlates between personality attributes, childhood background, imaginative interests, etc., may not yet provide significant correlations, but they do give a picture of the potentially hypnotizable person by qualities that are intuitive for any therapist. The portrait may not emerge from hard figures, but it is nonetheless helpful—in the manner of an identification photograph with less than perfect definition.

CHANGES IN ROLE CONCEPTS OF POLICE OFFICERS

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Seasoned police officers have long been aware that police training and experience "does something to a man." The process of becoming a policeman is a complex one and many factors come into play. The research staff of the International Association of Chiefs of Police is conducting a study of the changes that occur in role-related concepts held by the police officer at various points in the training and probationary phases of his occupational socialization.

The IACP was founded in 1893 in Chicago. Headquarters were moved to Washington, D.C. in 1940. Originally begun by 51 U.S. Chiefs of Police, it has now grown to a membership of 7,000 law enforcement executives from 60 nations. The original objectives were: to advance the art and science of police work, and to develop and disseminate improved administrative techniques and practices. A major goal was to foster police cooperation and the exchange of information among police all over the world. Establishment of standards and effective recruitment, as well as professionalization of police work, have been continuing concerns of the IACP. Their training programs and materials are now used by nearly 2,000 police agencies. Policemen of all ranks and in all positions have attended their seminars. The IACP has also worked with State legislators to write laws that help to promote uniform standards and training for police across the country. In addition, they have helped many universities and colleges to develop and improve police science degree programs.

Changes in Role Concepts Study

Since 1966 when this study was originally funded, the investigators have sought to examine the effects of occupational socialization upon men entering into law enforcement. The study focuses on the consequences of both police training and early field experience upon the new policeman. At this time, Phase I which deals with training is completed, and Phase II which deals with initial field work is beginning. The IACP research staff has fraternal entree into many police departments across the country and has the cooperation of many police chiefs. The police in this country are presently being "studied" and "examined" by almost everyone, but rarely does a group have such good credentials.

A major focus of this study is the discontinuity between the student role during the training phase and the actual performance of police duties in the field. The recruit experiences changes in role concept as he shifts from civilian to police trainee. Later he experiences another set of changes as he moves into the apprenticeship period. How he handles these transitions will tend to determine the kind of officer he becomes during his later work years.

The training courses have a core of technical "how to do it" material, but in addition these courses typically focus on ethical and philosophical issues. A simple matter of how to make an arrest becomes a major issue when it is evaluated in terms of a derelict on a slum street or a well-dressed businessman or politician. Issues related to the equal and impartial treatment of others call for complex and sophisticated judgments. For the police recruit, such matters bring him directly to the core of role conflicts with which police officers must deal when in the field. Police training classes tend to discuss such issues on an ideal basis. Then later when the novice enters the field and is working with an "old-timer" he may hear a rather different approach suggested. The separation between the role of the student recruit and that of the working policeman is illustrated in explicit terms by a quote from a training manual given to recruits in one major city:

> The student is primarily a student and not a police officer. If you see the need for police action, call 222–3333, identify yourself, and ask that a police officer be dispatched. Do not become involved in police action unless it is of an emergency nature.

The role of the student recruit is designed to be passive for sound practical reasons. In this way the public is assured that its policemen are fully trained when they become active. However, the student recruits often feel discomfort at being nominal policemen, but not being able to act like one. Even in field situations where they see emergencies occurring, recruits are encouraged to remain inactive. One trainee, after seeing a serious automobile accident and remaining inactive, commented:

> We didn't do a thing * * * We stood there with the rest of the crowd, waiting for the police to come. That afternoon, I sat in class asking myself why I hadn't done anything to help. After all, I'm a policeman, too.

The investigators see problems of role transition arising from this passive student role when the recruit is required to assume full and active police work at the end of his training.

Training is done in school-like settings. Typical police training proceeds with lectures, assignments, and periodic examinations. The student recruit may also observe actual police operations. The training staff of a police department is usually physically separate and perhaps ideologically different from the rest of the department. The usual good training program across the country is about 14 weeks in duration. However, on a nationwide basis, training programs may range from a 7-month program with heavy emphasis on the social sciences, as in Chicago, to a few weeks of "how to do it" indoctrination.

Contact with the training staff tends to cease for the recruit with the end of formal training. Only rarely is there a followup intended to create a feeling of continuity between these two roles. In a few departments, experienced men are specially designated to be field training officers and new men are assigned to work with them during their initial field experience. Without such transitional assistance, what often happens is that after careful teaching of proper procedures and idealistic concepts, the common thing is for the "old-timer" to instruct the new policeman to "just forget what he learned in training." The investigators point out that the contrast between the ideal and the actual is personified in the relationship between the police apprentice and the "old-timer."

Also the new policeman brings to his work all of his own experiences with the police as a citizen. He comes from a society which has varying and conflicting attitudes about the police and he may retain some of this mixed view of the law enforcement institutions. He must reevaluate the necessity for and the value of police work as he shifts from being a citizen to being a policeman.

The Research

Police departments of four cities were selected. A variety of factors were considered. The cities ranged from 935,000 in population to 502,550. The training programs in these cities began at close intervals so that the testing could take place nearly simultaneously. A regional bias occurred that focused on the Midwest and the Northeast, but these departments are nonetheless thought to be quite representative of large, but not the largest, cities in this country. The conditions of employment were similar in each department. The age limits for employment were 21 years to the early 1930's. The oldest age allowed was 35 years. Three cities had no residency requirement and one city had a requirement of one year. All required that the applicants be high school graduates or have a General Education Diploma. The GED is frequently obtained in lieu of a high school diploma by men who complete their high school education while in the military service.

Characteristics of the cities chosen are as follows:

City	Estimated population	Square mile area	Number of department employees	Percent of civilian employees on force	Number of sworn personnel	Police per 1,000 population	Police per square mile
A	935,000	93.8	3,371	10.3	3,025	3.24	32.25
B	502,550	77.6	1,000	10.9	891	1.77	11.48
C	573,280	112.1	882	15.1	750	2.52	6.63
D	515,000	86.0	1,043	13.9	898	1.74	10.44

Three of the four cities gave preference to veterans. The length of recruit training was 14 weeks in three cities (*A,B,D*) and 16 weeks in the other (city *C*). The probationary period was 12 months in three cities (*B,C,D*) and 24 months in the fourth (city *A*).

The investigators note that average figures for 15 cities with populations from 250,000 to 500,000 for the above-characteristics are: police per 1,000 population—1.69; police per square mile—12.74; and percent of civilian employees—13.2.

Six areas within role theory were selected for inclusion in this research. They were: role conflict; role attributes; aggregate role; perception of audiences; perception of danger; and attitudinal orientations to role. A paper and pencil instrument was developed to explore each subject area. Collectively, they made up the Role Perception Battery (RPB).

In addition, a life history form and a supplemental information form were added. A standardized personality inventory was also given. Testing was done at two points, at the beginning of training and at the completion of training. The former was referred to as T_1 and the latter as T_2.

Subjects

Initially, 152 subjects were tested. Of these, 16 did not complete the training period, 15 of which were in one city where the training program is seen as part of the selection process.

Residential stability was a striking characteristic of this group.—In city A, 67.4 percent of the subjects had lived only in or near the city and had lived nowhere else. Forty to 50 percent of those in the other cities had similar residential patterns. In addition to this, a sizeable number had lived elsewhere only during their military service. Since only city D had a residence requirement and the others could accept men from anywhere in the country, this is a startlingly stable group in terms of residence. Census department data suggest that only men in agricultural vocations showed a greater degree of residential stability than this group. The investigators suggest as the farmer is physically and psychologically tied to his land, so these police recruits are psychologically tied to their cities. In addition, they feel that this finding may relate to the conservative point of view often attributed to policemen.

The group is typically in the midtwenties in age. City A has a slightly younger group—average age 23—and City D a slightly older group—average age 24.8 years.

The majority of the recruit subjects were white. The highest percentage of nonwhite was 30 percent Negro in city A. Cities B and C had only 3 percent and 2.5 percent respectively, and in City D 15 percent of the group were Negro. In no city was the percentage of the nonwhite in the recruit class as high as the percentage of nonwhite in the general city population. As a total group, about two-thirds of the recruits were married and a third single. Very few were separated or divorced. In City A there were more single men than in the other cities, and there the number of married and single men was about equal.

The subjects in these four recruit groups were all high school graduates, and 32.5 percent of the men had had some college experience. IACP data show that this group has slightly less formal education than a nationwide random sample of police recruits. Although the General Education Diploma is acceptable in many police departments it is generally felt that it is not the full equivalent of a high school education. There is some feeling that it should be dropped as an acceptable entrance requirement.

Socioeconomically most of these recruits came from middle-class backgrounds. Although they were young and could not be expected to have experienced much upward mobility, most of the recruits were in skilled work or better prior to police service. A few had come directly from military experience. They came from families that were solidly middle class. About 34 percent of their fathers had been craftsmen and foremen; about 17 percent of their fathers had been machine operators; and another 13 percent had been in professional, technical, or managerial jobs. Only 3.3 percent of their fathers had been in police work, and only 2 percent had been military.

Most of the recruits, 70.2 percent, had an increase in pay over their previous job when they joined the force. The investigators point out that this increased income may be a prime reason for the recruits to join the force. They doubt that the men become police officers to increase their social status, a rationale often suggested by people who see the men as trying to escape lower-class backgrounds.

The investigators have attempted to explore the prepolice work vocations of the recruits with an eye to seeing how well it prepared the recruit for police work. They utilized the job component breakdown in the U.S. Department of Labor *Dictionary of Occupational Titles.* These classifications allow gradation of jobs into different categories, such as their demand for handling data, people or things, and various tasks, such as synthesizing, teaching, driving-operating, etc., and then further allow an estimate as to the intensity or importance of each function in each job. All classifications then give a general indication of the nature and complexity of the job. For example, the psychiatrist is high on handling data and on important and influential work with people, but the position generally is considered not to be active with objects or things. A mathematical statistician's job is classified at the highest level of complexity with regard to data and low with relation to people or things. A carpentry laborer, on the other hand, does not deal with data or people to any marked degree and even is seen as functioning on a relatively low level with regard to things.

The police patrolman's job is characterized in this dictionary as being one that calls for analysis of data, speaking and being influential with people, and not having any significant relationship to things. The investigators feel that contemporary police work makes an even higher demand on relationship to people than this index indicates and that in many cases the work would deserve the highest level of interpersonal work on this index, that of advising, counseling, or guiding. When prepolice jobs of the recruits are examined it is found that only 22.6 percent of the subjects held a job in which the relationship to data was equal to or greater than that of the patrolman. Of even greater significance is the fact that only 26 percent of the subjects held jobs in which the relationship to people was equal to or exceeded the classification assigned to the position of patrolman. Since only about one-third of these subjects attended college and over two-thirds held jobs which had no significant relationship to people, the need for considerable preparation for the complex interpersonal relationships of police work is even more striking.

A parallel question was asked of the subjects to assess their vocational interests. To what extent were the men interested in jobs which were primarily oriented toward dealing with people rather than data or things? The great majority of subjects were interested in jobs that dealt with data at a high level. Almost half of the subjects had considered other jobs with no significant role with people. Fifty-four percent were interested in vocations which had no significant relationship to things.

Only about one-third expressed an interest in a job that involved complex work with people. By and large, not only do these subjects lack a vocational background for dealing with people, but in addition this aspect of a vocation is not attractive to them. The implication the researchers have drawn is that police training then should impart to these recruits an understanding of what human relations is and also try to create a general interest in dealing with an understanding people.

Another important preparatory experience is a background of shift work. The changes in shifts require a man to make rather difficult physiological, psychological, and sociological adjustments. It is thought that many men rule out police work as a vocation as they would not want to do shift work. Over two-thirds of the subjects had previously held shift-work jobs. It has also been suggested that shift work limits the nature of outside work friendships. This may contribute to the fact that many policemen have other policemen as their closest friends.

Other issues are also important. The research shows that most policemen are recruited or persuaded to join the force by friends or relatives. Rarely do men come to police work through reading or educational exposure.

Most policemen felt their entry into the profession was approved by wives or families. About one-third felt that it was strongly approved and only a few felt that their choice was mildly or strongly disapproved. The great majority said they would again pick police work "if they had it to do over."

Personal Friends

When asked about their three closest friends at the time of the first testing, policemen were named in 46 instances. At the time of the second testing the number who had a policeman as one of their three closest friends was 92. This may be explained by the tendency to choose good friends from working colleagues especially for men engaged in shift work. However, other preliminary data suggest that the recruits experienced some negative changes in their relationships to their close nonpolice friends. This provides some quantifiable evidence of the "clannish" behavior often attributed to policemen.

Aspirations

Several factors interact to influence a recruit's aspirations. The focus and value assigned by each department will make some positions more desirable than others. The man's own self-image, his sense of achievement so far in police work, as well as his perception of the opportunities available in police work, all play an important role. It is reasonable to assume that a recruit's aspirations are influenced by all of these things, as well as the introduction he receives to each position during his training period. Mass communication media, such as movies and TV, help to make certain roles, such as that of the detective, more visible and even more attractive, and this affects the police recruit just as it does the general public. The premise here is that the level of a man's aspiration will influence his day-to-day work. A man may tolerate a boring, difficult, and lonely job as a temporary stage in his career, but he would view it differently if he felt it were to be his life's work. In this research, recruits were asked what position they would like to hold in 10 years. Those who were successful in training tended to aim higher than those who were not. At the time of first testing no one wanted to be a police instructor. Many wanted to be sergeants in City B, only a few in City A. In City A five recruits wanted to become a captain. A large number in each city wanted to be a lieutenant. Only a few aspired to be higher than a captain. The results showed a higher level of aspirations overall in City A than City B.

The investigators note that in police work the majority of positions are equivalent in terms of status, pay, and responsibility. A man may work in traffic, juvenile, canine units, community relations, or other departments without additional training or advancement. Some departments rotate men through all sections and some do not. Consequently, in reality there are relatively few opportunities for advancement within most police departments. It is suggested that this also presents a possible source of discouragement for men who have not been adequately prepared for this and who may expect wider opportunities for advancement.

Personality

Within role theory, personality is important in that it reflects the initial selection of an occupational role and the way in which the role is enacted. Within this research, personality variables may be related to role conflict, role attributes, the perception of danger and attitudinal orientations to the particular role.

The Edwards Personal Preference Schedule was utilized to make some assessment of certain personality variables. Since this is a study of a group of men in a period of transition from civilian attitudes to police officer, relative descriptions of personality seem to be called for and can take two forms. When subjects were compared to a sample of male college students enrolled in at least one psychology course, they obtained lower scores on such variables as achievement, autonomy, affiliation, succorance, and domination. The recruits obtained higher scores on such variables as deference, order, abasement, and endurance. On the other hand, when the subjects' scores were compared with those of a sample of experienced Chicago police officers, they were found to be lower on achievement and autonomy and higher on abasement and nurturance than were the experienced officers.

If we accept the equivalence of the male college sample with the group of civilians from which the recruits came, and the equivalence of the Chicago police sample with the generalized police occupational groups, then we can say that our subjects seemed to be more similar in terms of personality needs to the members of the occupational group which they were entering than they were to the civilian groups from which they came. However, as inviting as such a comparison is, the investigators warn against such facile interpretations of the data. The norms used are simply not a sufficiently accurate reflection of the true universe to allow for valid comparisons. Koponen's research, which involved an analysis of demographic data and the EPPS, fully supports this cautious approach. He found high significant differences in test responses when he analyzed scores in terms of sex, age, income, education, urban/rural and geographical region.

The EPPS was employed within this research to assess changes which might occur in the responses of the same subjects on the first and second testing. We are interested in learning to what extent personality, as reflected in the scores of the 15 variables in the EPPS, is modified by police experience. Although statements comparing the subjects' scores at the time of the first testing with the normative scores obtained by other samples at other times can serve us as a rough benchmark, those normative scores do not allow us to make general comparative statements between groups nor do they allow us to make general descriptive statements about the group personality characteristics of our subjects.

One personality variable, autonomy, does call for some mention at this time. This variable is defined as the ability to come and go as desired, to be independent of others in making decisions, and to avoid situations where one is expected to conform. Subjects scored significantly lower than the college or the police sample. In a study of Chicago police, Baeher, Furcon, and Froemel found that active and low-tenure officers made relatively lower scores on the EPPS autonomy variable. Colarelli found that the "good men" in the Kansas Highway Patrol also made lower scores on the EPPS autonomy variable. These two findings suggest that the variable of autonomy is related to good police performance and therefore should be given special consideration in the future analysis of the data obtained from the next administration of the test.

Role Conflict

Historically, the police were watchmen charged mainly with keeping the peace on the streets. Catching criminals was not their problem. A victim was obliged to find the criminal himself, and then when he had done this he could pay a fee and hire a constable who would take the guilty party into custody. Later, police functioned on a contingency basis, keeping part of the goods that they recovered. Roger Lane, in his historical study, points out that police as we know them came into being to control civil disorder rather than as a result of growing crime rates. Prohibition brought new complexity to law enforcement as here the police were given the job of enforcing laws that were widely unpopular. Edward Savage, the chief of the Boston Force in the 1870's and 1880's, set forth an important piece of advice that is still often heeded in contemporary police work: "In ordinary cases, if you find yourself in a position of not knowing what to do, better to do too little than too much; it is easier to excuse a moderate course than an overt act."

Certainly as time has passed the conflict in the expectations of various community groups has not become resolved. As soon as he begins to work in the field, the police recruit will come into conflict with many different reference groups. During the training phase he will primarily be in touch with police instructors and other trainees. Later he will see that these groups are not always in key with other groups, and not even with other groups within the department itself.

Perhaps the training phase has relatively few possibilities for conflict. However, as one of the functions of training is to increase the sensitivity of the trainers to the behavioral expectations of other reference groups, some role conflict may be generated during this phase.

An instrument was developed to assess the expectations of audience groups as indicators of the sources of role conflict and its intensity. Fifteen significant audience groups were identified through pretesting with selected experienced police groups. These groups were then divided into the general categories of police: court, personal, and public audiences. Police audiences included: experienced patrolmen, other new patrolmen, instructors, and supervisors. Court audiences included: judges, lawyers, probation officers, and prosecutors. Personal audiences were: family and friends. Public audiences included: businessmen, civil rights leaders, clergymen, newspaper men, and politicians. The respondents were then requested to indicate their concept of the expectations of each group with regard to various issues.

First, the recruits were asked to indicate their conception of the expectations of each of the various audience groups regarding the way they were to learn police work. At the start of recruit training, 38.8 percent of the subjects felt that experienced patrolmen held the expectation that recruits will learn the police role primarily through experience. The investigators found that when the subjects were retested at the end of their training, the percentage rose to 64.7 percent. In general, police and court audiences were more frequently seen as leaning towards learning through experience, while the public audiences were perceived as expecting that more learning would go on in the classroom.

Next, the recruits were asked how they felt they were expected to treat the public. The choices were either impersonal and reserved or friendly and good-natured. Most recruits felt that the majority of police and court audiences expected them to be impersonal. This is no surprise since impersonality is generally considered to be a desirable quality for professional police personnel. Overall, the criminal justice system is designed to be impartial and impersonal. The investigators point out that there is much about law enforcement that lends itself to impersonality. The wearing of a uniform contributes to this. The nature of police work whereby a patrolman deals continuously with other peoples' emergencies also gives cause to develop a certain detachment. The investigators also point out that the number and the nature of police contacts with people may produce the occupational characteristic of some emotional blunting.

As stated, most recruits felt that most police audiences expected them to be impersonal in dealing with the public. They saw court groups as holding the same expectation. To the contrary, they felt that most public and personal groups expected them to be good-natured and friendly. Politicians, for example, were seen as expecting policemen to have a friendly approach when dealing with the public. The potential for conflict can be seen here and it is expected that it will increase in intensity as the men become experienced in the field.

Given the question of handling the arrest of a drunken schoolteacher and a drunken laborer, the recruits were asked to reflect upon the expectations of others. The alternatives presented were handling the arrests the same way or in a different manner. Recruits perceived that police audiences expected them to be "legalistic" and handle both drunks in the same way. They see court audiences—judges, probation officers, and prosecutors—as wanting them to treat both drunks alike. They thought personal groups, such as family, expected all drunks to be treated alike. Within the public category at the time of the second testing, 75 percent of the subjects thought that businessmen would expect them to treat the arrest of a laborer and a schoolteacher differently. Fifty-one percent of the subjects also perceived civil rights leaders as expecting them to treat both persons alike. Again, this is an issue that can cause conflict.

A key issue and one heatedly debated by both the public and the police is that of the role of the policeman with respect to "stopping crime or respecting civil liberties." The investigators point out that generally the issue is posed in two extreme points of view. One is that the maximum efficiency in enforcing the law and the protection of the broader interests of society is impossible without the sacrifice of some constitutional guarantees. The other view is that constitutional guarantees against coerced or otherwise illegally obtained confessions or admissions, against unwarranted search and seizure, against illegal arrests and confinements, are important elements of a free society.

With regard to these two extreme positions, the recruits perceive that most audiences wish them to take a middle position, that of respecting rights, but still doing what can be done to stop crime. However, at the time of the first testing, 24 percent of the recruits perceived the expectation held by experienced patrolmen as being one of stopping crime even if it requires sacrificing certain civil liberties. The figure rose to 36 percent at the time of the second testing. Recruits thought that businessmen expected them to stop crime even if civil liberties had to be sacrificed. Thirty-seven percent of the subjects felt this way at the time of the first testing, and the figure rose to more than 49 percent at the time of the second testing. To the contrary, over 51 percent of the subjects saw civil rights leaders as holding to the view that civil liberties must be respected even if it results in increasing crime. Here again the possibility for conflict is present in this situation.

The recruits' perception of expectations about change or lack of it in themselves is the next issue. Recruits who feel that they are expected to change may approach a situation differently than those who feel that police experience will not affect them personally. The majority of recruits feel that the police groups hold the expectation that police experience will make them change as persons. The investigators suggests that those recruits who feel the expectation to change will in fact change more during their training and experience phases than those who do not see an expectation of change. The subjects felt that family and friends did not expect them to change. They see public groups, and official groups as well, as expecting them to change. In most of the previous conflict situations the recruits saw varied and diverse expectations with a number of groups ranged on each side. In this situation, they see the majority of all audiences except their wife and other family members as expecting them to change.

The police recruit is in a process of adopting normative modes of police behavior and the extinction of other more civilian ways of behaving. An important part of the process will be related to perception concerning relevant role reference groups and a sensitivity to their expectations and evaluations. As a recruit-student he has relatively few people observing and judging him, primarily other students, friends, trainers, etc. As he enters the apprentice patrolman phase, the number of relevant reference groups grows to include almost all of the community. The policeman then must sort out the groups to which he will attend. This process largely goes on without formal discussion as most training classes do not deal directly with issues like those presented above or their potential for conflict.

When asked how bothered they were by the conflicting expectations, the recruits tended to reply moderately. In only one city was there a statistically significant difference between the group score at the start and at the end of training. In City *B* subjects were "bothered" to a greater degree at the end of training than at the start on the issue of handling the arrest of the drunken teacher and the laborer. In this instance, training had the effect of increasing role conflict on an issue with which the recruits anticipated they would soon have to deal in the field.

Attitudinal Orientations to the Police Role

The research staff conducted a Police Opinion Poll in 1968 and collected the responses of 2,042 experienced patrolmen. The questionnaire asked the opinion of this nationwide sample of officers regarding such statements as: "Criminal ways are acquired through experience and are not inherited," "Experience has shown police officers that there is a big difference between whether a man really is guilty and whether the court says he is," "The best officers generally have more education than others."

A factor analysis of the responses of 2,042 experienced police patrolmen produced four factors with loadings beyond the statistically significant level of .30. These four factors have been descriptively labeled: Valuation of Formal Education; Hardness and Cynicism; Conformity to Authority; and Conservatism. The recruit sample in the four cities previously described was given a questionnaire of 20 of these items which contained the four factors. When compared to the 165 recruit subjects in the original administration of the questionnaire to the nationwide sample of patrolmen, our subjects showed themselves to hold the same opinions. There were no statistically significant differences between the two groups of recruits. When compared to officers in the nationwide sample with up to 3 years experience, there were statistically significant differences at the 1 percent level on the factors "Hardness and Cynicism" and "Conformity to Authority." Recent student scores were significantly lower on cynicism and significantly higher on conformity to authority. On the basis of this analysis, the investigators hypothesize that as subjects gain police experience in the field, they will obtain higher scores on the hardness scale and lower scores on the authority scale.

When comparisons were made within each of the cities between the time of first and second testing, the recruit students in only two cities showed differences. In City *C*, recruit subjects showed an increased valuation of education at the second testing. In City *D*, subjects showed an increase in the cynicism scale on the second testing. In this same city, differences were also found at the 5 percent level on factors I and

IV. Subjects obtained higher scores on the valuation of education scale and lower scores on the conservatism scale.

Role Attributes

The recruit's concept of attributes that are essential to the enactment of the police role actually reflect his idea of the role of the policeman. Thus, changes in conception of role attributes will vary as the concept of police role is altered. If a recruit at the start of training conceives of police work as consisting largely of physical tasks carried on in a hostile environment, then logically the attributes which are seen as essential for this kind of work are physical strength and courage. After training, if the recruit now recognizes the role of the police in regard to performing a variety of public service functions and sees that people can in many instances be dealt with more easily through verbal rather than physical skills, then such characteristics as verbal skills, courtesy, and knowledge come to be valued more highly.

In an early inquiry done by Westley into the qualities most necessary in a good policeman, 41 percent of the 27 respondents listed alertness and competence as the most essential attributes. Thirty-seven percent listed "hard consistent work" as a desired characteristic, while 30 percent of the subjects stated that a "likable personality" was important. Interestingly, the 27 respondents who mentioned a pleasant personality felt that this quality was important in a companion on long tedious hours in a patrol car.

This research replicated the Wetteroth's Trait Image Scale to determine the nature of concepts about role attributes held by their recruit subjects. Wetteroth devised a list of 40 qualities and then gave this list to 40 New York City police recruits at three points in time: preappointment, postacademic, and postfield training. Each time he asked his subjects to select the ten most essential traits. From their responses, he determined a "trait image"—a cluster of seven or eight characteristics that they felt were essential in a good policeman.

This Wetteroth scale was administered to the research subjects at the start and at the end of training. In all four cities, as well as in the Wetteroth research, subjects chose as major traits: dedication, alertness, "well-trained," and common sense. At the other extreme, respect for superiors, patience, responsibility, and reliability represent attributes which were chosen in only one city. City C proved to be atypical. More attributes were selected there beyond the level of chance than was true of other cities. In that city, patience, responsibility, and reliability were selected there and nowhere else. Interestingly, courage as an attribute was mentioned in the postacademic testing for only the New York recruits tested by Wetteroth. Only in cities A and B did subjects choose courage from the list at their first testing. One can imply from this that the subjects do not see police work as dangerous and consequently the attribute of courage is not essential.

Perception of Danger

The investigators note that police observers have commented that performance of the police role is modified considerably whenever an officer perceives he is in a dangerous situation. In such instances, his behavior may be more structured by expediency than by the expectations of others or by role prescriptions. They draw a parallel with the soldier in combat. For instance, a soldier may seek cover under fire due to the demands of the situation, regardless of what his superiors or colleagues expect of him. The policeman who finds himself in a dangerous situation may also be overcome by fear and this can interfere seriously with his ability to exercise good judgment or carry out skillfully complicated operations. The perception of danger and the way it is handled then may dramatically affect the enactment of the policeman's role. The research here is designed to find out the degree to which recruits perceive danger.

There is no doubt that danger is intrinsic to the police role and learning about the element of danger is part of the training. Despite this, the research staff notes that police training programs do not give specific attention to the problem of danger and how to cope with it. Westley observed in 1951 that "the theme of danger of the work has little real meaning for the ordinary recruit. Danger is not explicitly covered—it is incidental learning." This is still essentially the case. Learning about danger may take five forms. The first relates to the relationship between the police occupation, per se, and the danger associated with it. The Secretary of Labor in 1969, Williard Wirtz, stated that:

> Only garbage collectors, loggers, and coal miners face more hazards on their jobs than policemen. A banker can expect 217 accident-free years on his job—he could work five lifetimes before suffering a disabling injury. Loggers, however, have only 8 years before being felled by occupational accidents; coal miners have 11 years; and for policemen, odds run out in 12 years.

Official information about the degree of danger may affect the everyday working tone only slightly, but the facts that it deals with may make an impact. Also information of this type may influence those trying to decide upon a career in police work.

Secondly, the predictability of the danger involved is important. For a police specialist in bomb disposal this may be very predictable. For the general policeman the danger may be far less predictable. The ubiquitous possibility of danger in police work seems to affect their perceptions. There is feeling that it blunts a policeman's normal reactions to continually work in an atmosphere of violence. Wilson comments in an article, "The Patrolman's Dilemma," that the unpredictability may make the danger more serious than the facts of the danger involved might indicate.

> Statistically, the risk of injury or death to the patrolman might not be great in order-maintenance situations, but it exists, and worse, it is unpredictable, occurring when you least expect it * * * I would add that the risk of danger in order-maintenance patrol work * * * has a disproportionate effect on the officer, partly because its unexpected nature makes him more apprehensive and partly because he tends to communicate his apprehension to the citizen.

Thirdly, danger can be considered in terms of geographical assignments or positions on the force. Police in high crime areas may believe that they are in danger. In other areas, officers may feel they work in a relatively safe setting. Also, the officer who works in a clerical position may not expect danger, while the officer on patrol may be ready for it at any minute. The police recruit must learn to relate varying degrees of danger to his situation, and be realistic about his perceptions.

Fourth, the recruit must be able to judge the appearance and conduct of people in terms of the danger they present. He often develops a perceptual shorthand to identify certain kinds of people as symbolic assailants. This is a very important area, as the way and the accuracy with which the policeman identifies "dangerous individuals" have important implications not only for his safety, but for many issues in police community relations. It is thought that this is largely learned through experience.

Last, the danger in specific situations may be spelled out in training. The recruit usually learns very early that "family disturbance calls" are most dangerous. Police records show, for instance, that many policemen are killed or injured when transporting suspects or when called to handle family disturbances. In family problems, it is relatively common for both parties to turn on the policeman. FBI statistics show that between 1960 and 1967, 86 policemen were killed responding to disturbance calls. Between 1960 and 1967, 411 police officers were killed by criminal action. About 66 percent of those officers had been assigned to car patrol. Assignment to a patrol car is typically the initial assignment a recruit gets after completing recruit training. The apprentice's first assignment then is to what is perhaps the most dangerous position in law enforcement. A portion of this research is designed to assess the perception of danger of a motorized patrol assignment and also to determine, if possible, the preconceptions of the recruit attached to certain radio assignments, such as a report of a robbery or a family dispute.

The perception of danger instrument consists of 20 standardized radio assignments. Subjects were asked to rate each assignment as to the degree of danger they believe would be associated with handling the incident. There were significant differences in evaluation of certain assignments in different cities. Perception of danger in family disturbance varied meaningfully. The same was true of a call concerning an animal-bite victim. There was also some variation in reactions to calls related to the issues of murder, "a man down" (a man lying on the street), rape, and an "insane person".

The danger attached to "family disturbance" and "insane person" is partially explained by the attention given these in police literature. Policemen are often instructed that disturbed people are often potentially violent, and according to the way they are handled may or may not cause trouble. The others are not so easily explained, as good reasons can be found to explain the danger in them as well as in any other category given. By and large, there was considerable agreement among recruits in all cities as to how dangerous any task might be. Intercity rank order correlations ranged between .95 and .97. There were some changes in scores after training. In city B scores rose and in city A they fell as a consequence of training. It was hypothesized that a police recruit who felt well-trained to handle difficult situations would tend to be less anxious about the danger than one who felt poorly trained. The investigators quote one experienced police officer:

> "Although a possibility of physical injury in the line of duty exists, I feel that with proper training in methods of protection a police officer has a better chance of survival in a combat situation, and reduces the chance of injury. However, he must always be aware of danger."

A supplemental form was given to the recruits at the conclusion of their training to assess the subjects' conceptions of the sufficiency of the training they had been given. Thirteen subject areas were listed, five of which were related to those aspects of police work which might produce physical injury: crowd control techniques, firearms use, patrol procedures, physical combat skills, and the techniques of arrest. However, a correlation of the perception of danger scores and the sufficiency of training scores did not yield any meaningful scores.

Aggregate Role

For the purposes of this research, aggregate or group role is defined by a specific function assigned to an organization by society. The performance of any one role within the organization is then directed by specific prescriptions and proscriptions which are consistent with the organization's overall purpose or aggregate role. The police, for instance, have been given the function of preserving the peace, enforcing laws, preventing crime, and performing a variety of public service activities. All of these positions within a police department contribute in varying degrees to the performance of these culturally determined functions. The prestige of the functions, as well as the power of those performing them and the wages paid, reflect the value of each function. For example, patrolmen are necessary to accomplish the police mission, but their contribution can never be as great as that of the chief.

Respondents to the aggregate role instrument were asked to select and rank five positions in a list of 20 which they believed to be most important in accomplishing the overall police function. Their choices would reflect their conception of the aggregate role of the police.

For the combined group of subjects, motorized patrol and that of the radio dispatcher were seen as most important. We should note that the radio dispatcher and the patrolmen are in complementary positions. Also, the recruit-student's first assignment will probably be in motorized patrol. Recruits saw the police instructors and trainers as the next most important people. The fact that these functions reflect the immediate or near future involvement of the recruit undoubtedly plays a part in these assessments.

By and large, the more active "line" functions (patrol, traffic, investigations) rose in importance. Juvenile work was an exception in that it was seen as less important for the achievement of the aggregate police role at the end of training. Correlations between first and second testing in all four cities were high, ranging from .84 to .99. An early hypothesis of the research group was that increased police experience would tend to produce an increased valuation of active line positions and the devaluation of more passive staff positions. This was tentatively confirmed by this research.

Conclusions

The process of becoming a policeman is a complex one. This research indicates that policemen do not start out very different from the rest of the world. Although there are some differences, such as a willingness to tolerate shift work and to live with uncertain danger in their occupation. The personality differences that appear to exist tend to be in such areas as a need for autonomy rather than in areas such as sadistic tendencies, as so often is attributed to men interested in police work. They are more tied to their cities and less geographically mobile than the general public. They tend to enter police work not by way of childhood ambitions but rather because it was suggested by a friend or because it offered a raise in pay. Neither educational exposure nor recruitment drives seem to have been influential in the case of the recruits who took part in this study. As a group they tend to have the approval of wives or families for their entry into this work. As they continue in police work, their circle of friends tends to become more and more that of their police colleagues.

Although the student recruit is often perceptive about what is expected of him by various groups, he rarely receives much preparation for the conflict that this engenders and little assistance in resolving this. Police training is brief and in most cases technical. As police work has moved more towards more introspective and complicated interpersonal work, time has not been allotted to sufficiently incorporate this into training. The police instructors are attempting to teach and interpret sociological and psychological concepts under conditions that would make most social scientists despair if they were faced with the same odds with their students. In addition, the image of the policeman still doesn't reflect sufficiently the new responsibilities, and many men come into police work with little interest in or preparation for complicated and subtle interpersonal work.

This research examines the student role and the transition to active assignments. In addition to technical and legal information, the training period is given over to discussions of "good police work." At this point the police trainer is his main model. As the student moves into active duty he will discover often that the police training unit is highly separate from the rest of the department, which may cause a conflict about his primary model. In addition, the training period is highly academic and he remains largely in a rather passive student role. This shifts abruptly with the end of training when he is immediately, and often without additional supervision, placed on an assignment like motorized patrol. To make the contrast more apparent, it should also be realized that many first assignments are among the most dangerous in police work. He is very likely then to be receptive to the advice of an "old-timer," who will be able to give him very valuable advice, but who may also tell him to disregard what he learned in training.

The impact of the student days is suspected to be quite intense. There is some suggestion that the time of training is not enough for all the ideas to be absorbed and reflected in the instruments used here. The second phase of this study will perhaps yield more information about the impact of training.

The potential for role conflict is readily apparent in almost any phase of police work. It is difficult to imagine a group that is heir to more conflicting expectations. Several knowledgeable police observers have commented that the police are continually judged by a goal that cannot be attained—that of crime reduction. A new and thoughtful appraisal of the role of the policeman is needed.

One finding of particular importance to mental health professionals is the anxiety with which the policeman approaches a report of an "insane person." There is little doubt that in some situations there is extreme and unpredictable danger from a person who is mentally ill. There are enough psychotic gunmen in the news to make this apparent. However, it does appear that more knowledge might lead to better discrimination about mental problems and better handling of them as well. Many people who need psychiatric hospitalization are in the hands of the police for some time during a crisis period, and it appears that this area is one of the social problems that the modern policeman must handle. Perhaps a stronger focus for mental health information could be the law enforcement profession, if this could be done in a basic, practical, and useful manner necessary to be really helpful to the policeman on the beat.

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THE RURAL NURSE AS A CRISIS COUNSELOR

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Among the myriad of June graduates the last two years, 43 women in Vermont walked off the commencement platform holding a unique testimonial of achievement—a diploma certifying its holder as a *community crisis counselor.*

Each woman had completed a training program intended to demonstrate that the quality of mental health care in small towns and rural areas can be improved simply by enhancing the effectiveness of an existing major health resource, the registered nurse.

The program is financed by the Center for Studies of Suicide Prevention of the National Institute of Mental Health, but it aims to help people resolve crises of all kinds. As Dr. Carlton D. Marshall, the psychiatrist who conceived and is directing the project, puts it, suicide is merely an extremely maladaptive form of handling a crisis.

Though only 2 years old, the project had its beginnings a dozen years ago when Doctor Marshall, then a general practitioner in a rural Vermont county, was impressed by the number of times people in trouble turned first to a nurse. They felt comfortable with a nurse, at any rate with *their* nurse. She lived nearby. They had known her and probably her family a long time. Whether or not she was still practicing her profession, they felt free to ask for advice. Besides, the nearest doctor might be 20 miles away. Since there were more nurses than doctors, nurses as a group reached more people. In some cases even one nurse might have a wider influence, as measured by number of contacts, than one doctor.

After 10 years in general practice, Dr. Marshall studied psychiatry for 5 years under an NIMH program, joined the Department of Psychiatry of the University of Vermont College of Medicine, and became medical director of the Rutland Mental Health Service. This is a State and locally supported clinic that is in the process of becomi[illegible] a comprehensive community mental health center.

As he prepared for his new field and as he began working in it, Doctor Marshall was struck by the need for more trained mental health manpower. And he wondered if it could not be met to an important extent by making better use of people who were already dealing with individual and family crises, and thus preventing possible mental illness. "Every large family," he says, "tends to identify one member of it as the person who handles the crises in that family. I think much the same thing happens in a community—in a rural community, at any rate, and probably in an urban neighborhood: certain people become identified as the crisis-handlers."

From his GP days, he recalled, these crisis-handlers had often been nurses—not all of the nurses, just those to whom people in trouble seemed to turn naturally. Wouldn't it make sense, he asked, to try to identify such natural crisis-interveners, train them in the newest psychiatric concepts, acquaint them with the available resources—in particular, the mental health clinics to be found in almost every Vermont county—and thus enhance their ability to deal with emotional problems and prevent maladaptive solutions?

Joining him in answering *yes* was Mrs. Elizabeth K. Lincoln, a social worker who was a research associate in the University's Department of Psychiatry and a field consultant for the State's community mental health program. From observations in Vermont, New Hampshire, and Pennsylvania, she agreed with Doctor Marshall: nurses were an important rural mental health resource. Perhaps better than any other group, they could link the mental health facilities of the larger towns with the mental health needs of the countryside.

With the help and encouragement of Dr. Hans Huessy, Acting Chairman of the Department of Psychiatry of UVM's College of Medicine, Doctor Marshall and Mrs. Lincoln drew up a proposal for an NIMH-supported research and demonstration program, which went into effect in 1967. Mrs. Lincoln became the coordinator.

The Selection Process

The plans called for training nurses from three adjacent, largely rural, counties in the southwestern part of the State—Rutland, Addison, and Bennington. Fifteen nurses from Rutland and 10 from Addison would be trained in separate but identical courses the first year, and 10 from Bennington the second. That raised the problem of selection: how do you choose crisis counselors? Specifically, how do you select 35 of them from a three-county area containing 612 R.N.'s?

The project solved the problem by asking more than 100 authorities in each county—clergymen, hospital administrators, overseers of the poor, social welfare workers, lawyers, and physicians—for the names of nurses to whom people turned spontaneously for help. The 35 women whose names were listed most often were then invited to join the program. Everyone accepted. Eight other women were also invited in case there would be dropouts. There were none.

The women accepted ranged in age from the early 20's to the late 50's. Almost all of them were married and had children. The great majority also held at least part-time jobs—in hospitals, nursing homes, school systems, and various state and local agencies or as private duty nurses. All of them, even the few who had retired from nursing work of any kind, had reputations as individuals to whom other persons kept turning in time of trouble.

There were meager material rewards: a $100-a-year stipend for two years and a free private telephone line—in place of the four-and-five-party lines most of the nurses had before and still have for personal use—so that private matters can be discussed privately. These rewards seem to have had little if any influence on the nurses' decisions to sign up. In fact, the women who were admitted as substitutes in case of dropouts, and for whom there were no stipends or private telephones, have participated just as regularly and enthusiastically as the others.

"All these women," says Doctor Marshall, "have one thing in common—an extreme social awareness. They are involved people. They are involved in everything that is going on in their community and their county. They are very grateful for the assistance we seem to be able to provide to help them in work they have to do anyway. Even those women who had to drive 40 miles in the dead of winter seldom missed a class."

The Training Programs

Classes lasted two hours a night, one night a week, for 26 weeks from January through June—in 1968 for Rutland and Addison, and the following year for Bennington. They commonly opened with a talk by Dr. Marshall on some problem of mental health, and closed with a discussion of questions and case material presented by the nurses. Discussions were based also on three books given the nurses at the start of the course: "Crisis Intervention: Selected Readings," Howard L. Parad, editor; "Introduction to Dynamic Psychiatry," C. Knight Aldrich, M.D.; and "The Cry for Help," Norman L. Farberow and Edwin S. Shneidman.

In an introductory lecture, Dr. Marshall dwelt on crisis theory and crisis intervention. A crisis occurs when an individual or a family faces obstacles to important life goals—obstacles that usually cannot be handled satisfactorily without help. A Chinese word for crisis has two characters, one of them signifying *danger* and the other *opportunity*. And each crisis does involve both of these. Fail to meet a crisis, and one falls back, weakened. Meet it, and one goes ahead, strengthened to face other crises. Nurses, and especially those in the program, were continually dealing with crisis situations. They should know that a little help given early and purposefully would prevent the need for much more extensive help later on.

A number of succeeding lectures explored psychopathology in all its ramifications, with emphasis on early signs of mental and emotional distress. Many of the nurses—whose psychiatric training had been limited for the most part to 6 months duty in a State hospital, often many years before—found these lectures especially valuable. To throw more light on normal and abnormal behavior, another session dealt with the maturational crises to be expected as an individual passes through the various stages of life. With the help of psychodrama in which the nurses participated, another meeting emphasized the importance of recognizing the roles, tensions, and relationships of the persons involved in a crisis. Other meetings dealt with alcoholism, drug addiction, and mental retardation. Films explaining types of mental illness and effective ways of interviewing and counseling a troubled person and his family were shown and discussed.

To make the nurses aware of the resources open to people in a crisis, representatives from state agencies attended half a dozen meetings and described the services offered. Among the departments represented were Social Welfare (which includes services to children, the aged, and the indigent, and medicaid), Alcoholic Rehabilitation, Vocational Rehabilitation, Probation and Parole, and Mental Health.

Toward the end of each course, the medical or executive director of the local mental health service—in Rutland for Rutland County, Middlebury for Addison County, and Bennington for Bennington County—explained the structure and function of his agency and the procedures to be followed in referring somebody for evaluation and therapy. And he urged the nurses to apply for consultation at any hour of the day or night, a service that is being compensated by a small annual fee from the Project ($1,200 per year for 2 years). The resulting closer relationship between nurses and local mental health services is considered one of the project's more important results.

Following their certification as Crisis Counselors, each group of nurses meets for a monthly seminar with Doctor Marshall, Mrs. Lincoln, and staff members of the local mental health service. The purpose is to discuss problems the nurses have encountered and to arrive at effective ways of meeting them. When the project comes to its planned end in the summer of 1970, the first two groups of graduates will have participated in more than 20 such seminars; the third group, about a dozen.

Evaluating the Project

Has the project been worthwhile?

Staff members, the nurses themselves, and the agencies employing some of the nurses all testify that it has been. But there can be no objective answer as yet because the evaluation, being conducted by Dr. John Finan, former professor of psychology at George Washington University, is just getting under way. Doctor Finan is working with two kinds of evaluative material: The first is a set of cards, one for each client, on which the nurses are summarizing the principal facts about the cases handled since the end of the 26-week training period; included is an estimate of "lethality," or the danger of suicide, if present. An analysis of the cards will show the opportunities the crisis counselors have had for applying their new training, the outcome of each case, the extent to which mental health services and other community resources are being used, and something about possible changes over time in numbers and types of cases. Doctor Finan also will have available two long interviews with each nurse. One interview takes place shortly after graduation; another interview, at the end of the series of post-graduate seminars. Since each interview focuses on the three cases the nurse has handled most recently, the evaluator hopes to make judgments about the attitudes and skills of each counselor, decide how well she is filling her role, and perhaps suggest changes in the training program should it be offered again in Vermont or elsewhere.

Staff members feel that attitudes have indeed changed, for the better. At the beginning they know that the nurses were often inclined to be judgmental about the way they viewed people—to class a person as "no good," or as "a lousy bum," rather than as someone with a problem who might be helped if approached with an open mind. One nurse even remarked about a potential suicide: "Let him go ahead and take his life. He's no good either to himself or anyone else." ("A very prevalent attitude, by the way," says Doctor Marshall. "As several people have remarked, nobody ever kills himself without someone agreeing he did right.") Now these same nurses appear to be more open, more objective in their approach.

The nurses themselves are sure of the program's worth.

Reports a public health nurse, who covers 10 towns and parts of four counties: "Many times problems would come up on the job, or outside it, that I wasn't quite sure what to do with. Was it all right for me to handle them myself? Would it be better to refer them—and if so, what was the best place? I can answer these questions more easily now, partly because of the lectures at each meeting and partly because of the opportunity to hash over problems with Doctor Marshall and other people." This nurse was especially impressed by a meeting that dealt with child abuse. She feels that she can now recognize the danger signals more clearly and can step in before the situation becomes acute.

Other nurses, echoing her comments, say that they feel more sure of themselves. One of them puts it this way: "I think I understand better what makes people tick; I know better how to counsel with a family—how to talk with them." A school nurse is especially grateful for what she learned about drugs. When a sick-looking boy told her, "I'm on a trip," she knew, because of the training program, what he meant and what to do for him. A housewife says: "I would be doing this sort of counseling work anyway, but not so well or so confidently." A supervisor of nurses comments that she recognizes more clearly the problems of hospital patients and is better prepared to offer help. Other nurses report that they are working more effectively both on the job and in their after-hours crisis-counseling.

To a woman who works part-time with a social agency, the one most beneficial session was that dealing with disturbed children. "When I went to school 15 years ago," she recalls, "the time allotted for psychiatric problems was given almost exclusively to the handling of psychotics. But as a nurse, people rarely ask me how to handle a psychotic; they do often ask me what to do about a child with behavior problems."

One day several years ago, the same nurse recalls, a woman telephoned that a girl down the road was threatening suicide. "I was very unsure of myself in those days," she says. "There we were, facing a major crisis, and I didn't even know just how to get in touch with the nearest counseling agency." Along with many of the other nurses, she believes that the sessions dealing with referrals—how to make connections with agencies and individuals who can help when a person obviously needs more than the nurse herself can offer—were among the most valuable parts of the program.

The one most important resource, the nurses say, is Dr. Marshall himself. In addition to bringing him questions during the training program, the nurses telephone him whenever they feel stymied. One nurse recently advised the parents of a disturbed girl to take her to the county mental health agency. The agency, loaded with work and viewing the problem with less concern than the nurse, told them to come back in 2 weeks. "Maybe I was making too much of it," the nurse recalls, "but it looked like a crisis to me because the girl kept running away, and I thought the family should have the advice of a psychiatrist very quickly." Doctor Marshall agreed. Since the agency was beyond his jurisdiction, he suggested an appointment with a psychiatrist whom he knew. The nurse was relieved and the family grateful.

Some of the nurses say they are helping more people, as well as helping them more effectively. For example, after a list of the crisis counselors had been published, one nurse found that the schools in her community were calling on her more frequently and that a minister began conferring with her about some of the problems arising during his pastoral counseling. Doctor Marshall emphasizes, though, that the project's goal was to increase not the number of people served but the competency of the nurses serving them. So publicity has been muted. Originally it was intended to list each nurse in the telephone book with the designation, *Community Crisis Counselor*. This plan was abandoned for fear it would lead the community to think a new layer had been added to its mental health services. "We weren't trying to superimpose a new structure," Doctor Marshall observes, "and we didn't want people to think that we were. We simply wanted to improve the present structure." So the nurses with the new telephones are listed simply by their names and *R.N.*

As another indication of worth, three of the nurses have gone into virtually full-time mental health work with local mental health services. Further, the nurses in the program are sending more people to these agencies, an indication that the nurses are better informed about the value of mental health centers.

Dealing with Crises

During the first 2 years of the program the crisis counselors have successfully dealt with a number of cases of "high lethality", or potential suicide. One was a despondent young women who had tried to kill herself 2 years before, had been helped by the local mental health center, but was now too depressed to leave the house. Hearing of the trouble through the family next door, a crisis counselor dropped in for a visit. Over a cup of coffee, the despondent woman agreed to go along with her to the center.

Several times a month another nurse visits a man who once tried to commit suicide. Her informal calls serve to remind him that someone is interested and that help is available if needed.

A woman once hospitalized for depression lives with her three young children on a lonely road and has no automobile. One of the nurses speaks to her frequently by telephone (*listens* would be a better word because sometimes the woman talks almost uninterruptedly for 40 minutes) and occasionally drives by for a face-to-face talk. Project officials believe these contacts have been important in preventing a recurrence of illness.

There have been acute cases, too. A rural businessman who had cut his wrists was taken to one of the nurses because no doctor was available. (She had him admitted to the nearest hospital, then helped arrange treatment for him at the county's mental health center.) A boy walked up to a school nurse and said he had just taken half a bottle of aspirin. (She got him to a doctor in a hurry; arranged for counseling for him and his parents; and, when the boy returned to school, often invited him to her office for a talk.) A man carried a gun to his office and threatened to use it on himself because his wife had left him. (A nurse called by his employer persuaded the man to talk things over at the local mental health service.) A distraught woman faced with the sudden death of her husband threatened suicide. (A nurse called in by the neighbors arranged for immediate psychiatric treatment.)

Most of the cases have been less dramatic:

- A woman depressed because she was about to have her fifth baby and her husband had just lost his job. (The nurse arranged for household help and referred the husband to the nearest welfare and unemployment agency.)
- A man worried about whether or not he should go see his father, who lived in a distant town and had just had a heart attack. (If it would relieve his anxiety, said the nurse, he should go. The man went, felt better, and expressed his gratitude.)
- An anxious woman living alone on a small income. (A nurse, called in by a neighbor, began visiting the woman and eventually persuaded her to take up volunteer work in a nearby hospital. The anxiety and loneliness were considerably relieved.)
- A depressed woman, recently separated from her husband, who asked for help in getting him back. (The next day the man was injured at work and hospitalized in a nearby town. The nurse drove the woman to the hospital a number of times. During these visits the torn relationship was mended.)
- A friendless 7th-grader who had given up schoolwork. (The nurse sent her to a mental health clinic primarily because it sponsored a 4-H Club, as she had learned during training. With membership in the club, plus counseling, the girl was soon doing her schoolwork and making a few friends.)
- A sick, older woman, living alone, whom the neighbors considered suicidal. (The nurse they asked for advice decided that the woman wasn't suicidal but simply rundown and in need of medical care. A temporary stay in a nursing home was arranged. Eventually the woman was able to resume independent living.)
- The court-appointed guardian of a "model youngster" who had killed two persons and who, the guardian thought, needed more psychiatric help than the court seemed ready to approve. (Through the intervention of one of the nurses, he got it.)

Among the cases reported as crises, the nurses also handled those of an unmarried mother with a sick child and no income * * *. A woman who repeatedly imagined she had cancer * * *. A farmer with an injured finger who refused to go to a doctor but agreed to see a nurse. (She looked at the finger, said that of course he was going to a doctor, bundled him into her car and drove off.) * * *. An adolescent girl who had brought a boyfriend home and demanded, successfully, that her family let him live there * * *. An anxiety-ridden man from another part of the country who was trying to find a new home and a job in his native State * * *. A divorced woman becoming embittered with life.

Virtually all such cases, it should be remembered, came during the after-duty hours of those crisis counselors who are professionally employed, or during the typically busy day of those few who are full-time housewives. And in virtually every case the nurses felt they had helped people meet crises that were causing emotional distress and might have resulted in prolonged emotional impairment. Though the crisis interveners rarely solved a problem all by themselves, they rendered emotional first aid, and checked to see that any recommended additional treatment was carried out.

"We have a sense of belonging," one of the nurses has written. "We are members of the interdisciplinary professional team involved with community mental health, with its emphasis on education, prevention, home-based treatment, and rehabilitation. We can take pride that our contributions in a small circumscribed area have impact * * *. They exemplify all that is implicit in those two words, 'nursing care'. We are care-givers; we are care-takers * * *.

"As we know so many of our townspeople, so in turn are we known by them. They share our vicissitudes and victories. They are very much aware of our foibles. We may be the neighboring nurse to whom another turns for a sense of direction. In giving of ourselves to alleviate his discomfort, we find the truth of the philosophy expressed in the Hindu proverb, 'Help thy brother's boat across, and Lo! thine own has reached the shore.' "

When the present monthly-seminar program ends in 1970, Doctor Marshall hopes that it will be taken over by the local mental health agencies. (If it isn't, some of the nurses say, they are going to try to find ways of continuing it on their own.) He hopes that the whole training program will be repeated in other counties. He thinks that the program has won a favorable response in Vermont and has drawn inquiries from a number of other states because it uses talents already in the community, does not require a large expenditure of funds (in this case an NIMH grant of $124,000 for 4 years), and brings good mental health care to persons who probably would not otherwise receive it.

"We know that mental illness," he says, "often is related to the crises of everyday life—such as physical illness, marital or job trouble, bereavement. So anyone who helps a person resolve a crisis is practicing preventive psychiatry. Our nurses were already doing that, though they weren't aware of it, when the program started. All the signs indicate that they are now doing it more effectively."

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THE IMPACT OF VISUAL MEDIA ON PERSONALITY

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One of the fundamental means by which human behavior is acquired and modified involves vicarious learning. Both children and adults learn modes and standards to a great extent by observing the behavior of others. A great deal of attention has been focused in this country upon the television industry as this fact has become more and more apparent. In addition to television, motion pictures, books, and other reading material are visual media effective in producing vicarious, as opposed to directly experienced, learning. The variety represented by television alone demonstrates the difficulty of making simple judgments about the effect on the viewer. The variations in viewers and the surrounding circumstances in which they see the television again points out the complexity. The most insistent public focus on TV has been with regard to violence and its part in the violence observed in our society. An investigation of violence per se seems less likely to yield information on the underlying process of influence than is the study of the visual media with regard to its impact on learning in general. Dr. Albert Bandura has spent over ten years studying the effects of such media upon children and adults in a variety of situations. His work yields the definite finding that such media are powerful methods of teaching and important sources of influence, but that many lessons may be taught and they may not be the obvious ones. It becomes obvious that the environment in which the media is viewed is very important.

This research has demonstrated the stimulation of aggressive behavior by the viewing of aggressive acts on a screen. Variables have then been explored with attention given to the characteristics of the model and the attributes of the observer, and the consequences accompanying the demonstrated patterns of behavior. The difference between acquisition and spontaneous performance of aggressive acts has been examined. Further research has been done with the use of the visual media as therapeutic tools to relieve longstanding and serious phobias and to improve the social adjustment of withdrawn children. The common thread throughout the research of Doctor Bandura and his associates is the concept of observational learning and the effectivity of the modeling process.

Doctor Bandura states that research bearing on modeling processes demonstrates that, unlike the relatively slow process of trial-and-error learning, patterns of behavior are rapidly acquired observationally in large segments or in their entirety. The extent of this form of learning can be seen in children's play when they reproduce parental behavior, including the appropriate mannerisms, voice inflections, and attitudes. This process in a more general way is referred to as "identification."

Doctor Bandura became involved in this subject in 1958 when he conducted with Richard Walters, research on the family conditions which gave rise to extreme aggression in children. The focus was the adolescent from the "good home" who became antisocial and delinquent. Although a great deal of research had been done about the effects of poor and adverse family and social conditions, not much had been done to explain the reasons why affluent young men were becoming delinquent and antisocial. Families were selected who looked well integrated and socially well adjusted, but whose children were being followed by the probation department in the San Francisco area. A matched control group was also interviewed. Two central factors emerged. Many parents of the delinquent boys were models for antisocial attitudes and aggressive behavior despite their smooth social exterior. A second pattern was that the parents, especially the fathers, often would not permit aggression towards themselves but would encourage and reward their son in fights outside the family or defend the boy's right to "raise —." In sharp contrast, the nondelinquent boys were encouraged more to defend themselves with their ideas or in the nonphysical spheres. Aggression of a physical type was consistently discouraged through nonpunitive means in these families. These boys, who were not on probation, had been taught through example and precept a different way of solving their interpersonal problems than the aggressive boys.

Another incident occurred that dramatized the influence of demonstration or modeling. In 1961 the San Francisco Chronicle reported that a boy had been seriously knifed during a reenactment of a switchblade fight the boys had seen the previous evening on a televised rerun of the James Dean movie, *Rebel Without a Cause.* This was a vivid illustration of the imitation of film stimulation and stirred considerable speculation. The form of the aggression had been so clearly shaped by the film that it gave rise to the idea that aggression viewed through pictorial media may be influential in shaping the form of aggression when the person is in a provocative situation. The importance of the visual media in stimulation or instigating aggression also became a focus of this research.

Transmission of Aggression

One set of experiments was designed in 1961 to determine the extent to which aggression could be transmitted to children through exposure to aggressive adult models. In this early experiment children observed an adult who exhibited relatively unusual forms of physical and verbal aggression towards a large inflated plastic "Bobo" doll. A second group watched a very subdued and inhibited model. The control group saw no model at all. Half the children in each experimental condition saw models of the same sex and half observed the opposite sex. Later the children were mildly frustrated by having toys restricted for their use and then their behavior was recorded in a new situation where they could behave either aggressively or nonaggressively. The results showed that exposure to aggressive models heightened the children's aggressive responses to subsequent frustration in new settings in which the model was absent.

In 1963 this investigation was extended by Bandura, Ross and Ross. The effects of real life models and filmed models were compared. The children in this project, as well as in many of these studies, were drawn from the Stanford University Nursery School. In this study they ranged from 35 to 69 months of age, with a mean age of 52 months. There were 48 boys and 48 girls who took part. Two adults, a male and a female, served as models. A female experimenter conducted the study with all of the children. A "Bobo" doll was again used as the subject of aggression.

One group of children observed real models in the room with them, behaving aggressively toward the doll. A second group saw a film of the same models performing the same acts. A third group saw a cartoon of an aggressive figure. The control group was not exposed to any of these stimulations. Again half of the children saw models of their same sex. These children had previously been rated in terms of their normal aggressive behavior by their nursery school teachers and they were matched to the control group on this basis.

The children who saw the real life aggression were asked into a room and invited to join a game. The child was shown a table with a variety of activties. The model also worked at a small table doing tinker toys. Then the model turned to the "Bobo" doll and kicked it about the room, sat on it and punched it in the head, pummeled it, and hit it with a mallet among other things. The sequence of acts was repeated three times and was accompanied by verbally aggressive comments such as "Sock him in the nose * * *," "hit him down * * *," "Pow." These acts were not those usually performed spontaneously by children with a "Bobo" doll. Although the doll is designed to be hit, the usual play involves poking it or trying to knock it over rather than "beating it up." The main interest of the research was not whether the children hit the doll but whether they adopted the unusual modes of aggression demonstrated by the adults.

The movie sequence was identical except it was presented on film. The cartoon sequence was presented in a TV console and the experimentor introduced it as a color TV cartoon program. A film was then presented of a female model costumed as a cat performing against a brightly colored and fantastic setting. A title and a picture of a stage introduced the production. The cat figure then performed the same acts with the "Bobo" doll. Music was played accompanying the film.

Following the exposure, the children were tested for the amount of imitative and nonimitative aggression in a different experimental setting without the presence of models.

In order to clearly differentiate the exposure and test situations, subjects were tested for the amount of imitative learning in a different experimental room which was set off from the main nursery school building.

The children, both control and experimental groups, were mildly frustrated before they were brought to the test room by having the children begin to play with attractive toys and then being told that they were the experimenter's best toys and that she was saving them. The children were then taken to the testing room and the experimenter stayed with them, but did paperwork off to one side.

The testing room contained a variety of toys, some of which could be used for imitative or nonimitative aggressive acts, and others which tend to elicit predominantly nonaggressive forms of behavior. The aggressively oriented toys included a "Bobo" doll, a mallet and pegboard, dart guns, etc. The others included a tea set, crayons and paper, a ball, two dolls, etc. Play material was also arranged in such a way as to eliminate any variations in behavior due to mere placement.

The subject spent 20 minutes in the testing room during which time he was observed through a one-way mirror and his behavior was rated. The 20-minute session was divided into 5-second intervals, and so a subject was scored 240 times. The judges reached high levels of reliability in their scoring. The following response measures were obtained; imitative aggression; partially imitative responses; mallet aggression; sitting on "Bobo" doll; nonimitative aggression; aggressive gunplay.

Results

Exposure to aggressive models increased the probability that subjects will respond aggressively when instigated on later occasions

Further analysis shows that subjects who viewed the real life models do not differ from those who viewed the filmed or TV models in total aggressiveness, but all three experimental groups expressed significantly more nonimitative aggressive behavior than the control subjects.

The exposure to aggressive models is a highly effective method for shaping subjects' aggressive responses. Experimental subjects displayed a high level of imitative physical and verbally aggressive acts whereas control subjects rarely behaved in these novel aggressive ways. Thus exposure to aggressive models not only reduced children's inhibitions over aggressive behavior that they had previously learned, but also taught them new ways of aggressing.

A prediction had been made that imitation is positively related to the reality cues of the model and this was only partially supported. While subjects who observed the real-life aggressive models exhibited significantly more imitative aggression than subjects who viewed the cartoon model, the live and film, and the film and cartoon models increased nonimitative aggression in the children to the same degree. Data indicated that of the three experimental conditions, *exposure to humans on film portraying aggression was the most influential in eliciting and shaping aggressive behavior.*

The Effect of the Sex of the Model

The boys exhibited more total aggression than girls, more imitative aggression, more aggressive gunplay and more nonimitative aggressive behavior. The girls, for instance, were more likely to sit on a "Bobo" doll and refrain from punching it.

Subjects who were exposed to male models as compared to female models expressed significantly more aggressive gunplay. The most marked differences in aggressive gunplay were, however, found between the girls who had been exposed to the female model and males who had observed the male model. The girls who saw the female model tended to reproduce more partially imitative acts than the boys who saw the male model and were more likely to reproduce the larger actions.

The sex of the child and the sex of the model have an effect upon the degree of influence of the models, and this influence is determined in part by the sex appropriateness of the model's behavior.

Another section of this experiment dealt with the possibility of cathartic action upon the viewing of aggressive film material. The subjects were first frustrated and then provided with an opportunity to view an aggressive film following which their overt or fantasied aggression was measured. Many parents and educators encourage hyperaggressive children to participate in aggressive recreational activities, to view highly aggressive TV programs, and to be aggressive in therapeutic settings in order to "discharge" their aggression. Bandura's work and the work of other investigators demonstrate that the provision of aggressive models and the inadvertent reinforcement of aggression which occurs in these situations act to encourage aggressive tendencies rather than dissipating them. On the other hand, providing aggressive children with examples of alternative, constructive ways of coping with frustration can be very successful in helping them modify their destructive behavior patterns. Already frustrated children show more aggressive behavior after viewing live or filmed aggression than do frustrated children who are not shown a film. The filmed aggression *does not* fill their need, nor does it diminish their aggressive tendencies.

The view that social learning of aggression through exposure to aggressive film content is adopted by only deviant children, also finds little support in Doctor Bandura's research. The children who participated in this experiment were all considered normal; yet 88 percent of the subjects in the "Real-Life" and in the "Human Film" condition, and 79 percent of those in the "Cartoon" condition, exhibited varying degrees of imitative aggressive behavior. In assessing the possible influence of televised stimulation on behavior, it is important to distinguish between learning and overt performance. Although children may learn whole patterns of behavior by watching TV, they do not ordinarily perform indiscriminately the behavior of televised characters, even those who they regard as highly attractive. The responses of the parents appear to be very important in discouraging overt imitation. The investigators stress that the behavior is learned, however, even if parental disapproval inhibits it being performed and it may be elicited on future occasions. Indeed, recent research demonstrations show that children will not exhibit disapproved aggression in the presence of the prohibitive adult, but that they are inclined to perform such behavior when the disapproving adult is absent.

Children who had been previously rated as more aggressive than the others by their teachers did not differ in their aggressive reactions in the experimental setting.

The investigators have formulated a theory of social learning of aggression (Bandura and Walters, 1959) that would suggest that most of the responses utilized to hurt or injure others, such as kicking or hitting, were learned as exploratory asocial acts. For instance, the infant who learns to control his legs and kick is exercising and exploring his own movements, but not being aggressive. When frustrated, however, he may call on this response as one that can express his intense feelings, and then the kicking becomes involved in social interaction. On the basis of this theory, it would be predicted that the aggressive responses acquired imitatively, while not necessarily for aggressive goals in the experimental setting, would be utilized to serve such purposes in other social settings. It would also be predicted that children in the experimental settings would use this behavior aggressively more frequently than children in the control groups.

These previously mentioned experiments were primarily designed to measure the extent to which children learn by observing the aggressive action of adults. A second major question is whether exposure to aggressive models influences the harshness with which people treat others. To study interpersonal expression and aggressive behavior requires studies in which people are provided with opportunities to behave punitively toward another person after viewing aggressive or nonaggressive models. A study conducted in Doctor Bandura's laboratory by Donald Hartman reveals that aggressive models not only foster learning of aggressive behavior, but can also increase interpersonal aggression.

The catharsis hypothesis has generally assumed that viewing aggression reduces aggressive tendencies in observers if they experience anger at the time of exposure, but that it may increase aggression in nonangered viewers. To test this idea, Hartman conducted an experiment that proceeded in the following manner. One group of delinquent adolescents underwent an anger-arousing experience, while a second group had an essentially neutral experience. The boys then observed one of three movies. In the control film two boys engage in an active but cooperative basketball game, whereas in the other two films the boys get into an argument that develops into a fist fight. The instrumental-aggression film focuses on the behavior of the attacker, including his angry facial expressions, flying fists, foot thrusts, and hostile remarks. The pain-cues film focuses almost exclusively on the reactions of the victim as he is pummeled and kicked by his opponent.

Major obstacles arise in the study of interpersonal aggression because a socially significant measure would involve injurious behavior which cannot be used for humane and ethical reasons. This major obstacle has been overcome by several researchers by creating a situation in which one person can administer shocks of differing intensities and durations of his own choosing to another person. However, the electrodes are not connected to the victim so that he in fact does not suffer any pain. After viewing the films, the boys in Hartman's study were provided with opportunities to shock a victim. The intensity and the duration of the shocks administered were recorded.

Boys who had observed either the aggressive acts or the pain-cues films selected significantly higher shock levels, both under angered and nonangered conditions than boys who watched the control film. Moreover, angered viewers behaved more punitively than nonangered viewers following exposure to the aggressive films, a finding that is directly counter to the prediction of the usual catharsis hypothesis. Boys behaved most aggressively when they were angered and witnessed another person beaten severely.

Vicarious Reinforcement and Learning

In 1963 a study was reported by Bandura, Ross and Ross which explored the issue of vicarious reinforcement; that is, the changes in the behavior of observers resulting from witnessing the consequences experienced by others. In this study, nursery school children witnessed a variety of situations. The prime issue was whether or not they viewed an aggressive model being rewarded for his acts. The major finding was that children who witnessed the aggressive model rewarded showed more imitative aggression, and preferred to emulate the successful aggressor than children who observed the aggressive model who was punished. This last group both failed to reproduce his behavior and rejected him as a model. Control over aggression was vicariously transmitted to the boys by the administration of negative responses to the model and to the girls by the presentation of socially incompatible examples of behavior.

Interviews with the children at the completion of the experiment disclosed that although children in the aggression-rewarded conditions voiced disapproval while they watched the acts that they nevertheless emulated his behavior on the basis of its success. The key issue was that they admired the power the model gained over reward resources through his reprehensible behavior. The investigators noted that the children stated that physical aggression and forceful confiscation of the property of others is wrong and they criticized the model for doing it. Therefore, when these same children later copied this type of behavior, they can be expected to experience considerable conflict and discomfort. *They did not resolve this conflict by praising violence, but tendered to do it by criticizing the victim.* They viewed the victim as weak or provocative, ungenerous or unsharing, and thereby in a sense "bringing it on himself." In situations where the aggressive model was punished, even when the victim was quite provocative, the victim was not criticized and the aggressor was considered bad. Successful "pay off" of aggression rather than its intrinsic desirability served to stimulate imitation.

The implications of this finding in terms of the attitudinal and behavioral effects of television would indicate that successful hostile aggression would outweigh even the previously established values of right or wrong for the viewer. This study involves only a single aggressive incident that was rewarded or punished. In most televised programs the "bad guys" gain control over important resources and win considerable social and material rewards through aggressive acts, and punishment, if any, is delayed, as Dr. Bandura says, "until the last commercial." Many episodes which are antisocial and "pay off" are viewed before the punishment occurs.

Bandura and his associates find that fear of a punitive or aggressive model is not a necessary factor in identification and adoption of aggressive behavior. The success of the aggressive act rather than the fear of the aggressive agent is seen as more influential. This has relevance to the concept suggested by Freud of "identification with the aggressor," which postulates that a perceived threat by a punitive agent is the primary motivating force in the assumption of aggressive traits.

Social Power, Status and Identification

Although it is often assumed that social behavior is learned and modified through direct reward and punishment of responses, informal observation and studies suggest that the "power" of the individual involved may also be influential. A child who perceives his mother as a prime source of rewards in the family may identify with her rather than with the father who he may see as occupying a subordinate position, and even compete with him for rewards.

A study was devised to set up conditions with nursery school children and female and male models to reproduce possible family constellations of power and reward structures. One of the adults assumed the role of controller of a fabulous collection of toys and offered to go shopping for such highly desirable items as two-wheel bicycles for the children. The other adult served as a competitor, who monopolized the attractive play equipment and left the child out. In a second condition, the child was the recipient of rewards and attention. For half the boys and girls, the male controlled the reward resources simulating a husband-dominant home, and for the remaining children the female model controlled the positive resources as in a wife-dominant home. The two adults exhibited divergent patterns of behavior, and then the imitative behavior of the child was measured.

Models who were seen as having the power to reward elicited twice as much imitative behavior as models who were perceived by the children as possessing no control over the rewarding resources. Power inversions on the part of the male and female models produced cross-sex differences, particularly in girls. It was found a differential readiness existed between boys and girls in the willingness to imitate behavior by an opposite sex model. Boys showed a decided preference for the masculine role, whereas ambivalence and a masculine role preference were widespread among the girls. The investigators suggest that these findings probably reflect both the differential cultural tolerance for cross-sex behavior displayed by males and females, and the privileged status and relatively greater positive reinforcement of masculine role behavior in our society.

The research team further suggests that although failure to develop sex-appropriate behavior has received considerable attention and is often assumed to be established and maintained by concepts of dependency, psychosexual threat and anxiety, external social variables may also be important. For instance, the distribution of the rewarding power within a family may be very important. Although the small child has great contact with this mother he also has ample time to observe his father's behavior. Also children do not adopt "wholesale" the traits of one model. A child exhibits a relatively novel mix of behavior in his own repertoire.

The makeup of the family constellation is also important. This research shows that in a three-person group, for instance, if one person is denied access to rewards, the others may experience negative evaluations of the rewarding model and thereby decrease his impact as a modeling stimulus. The introduction of each new person and his treatment at the hands of the model may produce new shifts in the relationships.

Reinforcement by Self-Approval

People tend to set for themselves certain standards of behavior and respond to their own actions in self-rewarding and self-punishing ways in accordance with their self-imposed demands. This is a major difference in human and animal learning studies. Even children can decide whether their own performance is creditable or not. Speculation about how children develop these internal standards was transformed into an experiment. The children were given the opportunity to observe models performing, and then permitted to evaluate their attainments according to high or low standards and reward themselves accordingly. It was predicted that children tend to adopt the standards of self-reward exhibited by the models they observed, but that children in the control group who saw no model would have no consistent pattern of self-reinforcement. It was also predicted that the subjects would adopt the self-reinforcement patterns of the same sex model to a greater degree than that of a model of the opposite sex. It was also predicted that children would match the self-reinforcement patterns of adult models more closely than those of peers.

This study reported by Bandura and Kupers had a group of boys and girls from a summer recreation program as subjects. It was designed to be an investigation of the transmission of standards of self-reward. The children ranged from 7 to 9 years in age. Adult and child models performed a bowling game in which they adopted either high achievement standards or a low standard for self-reward. On games in which the models attained their standard, they praised themselves and treated themselves to candy; but when their attainments fell short of their adopted standards, they appeared self-critical. Later, the children who had observed, played the same game alone and the scores for which they rewarded themselves were recorded. The control children saw no models at all.

Children who saw no models or who saw models with low standards tended to reward themselves generously following a mediocre attainment. Children, who saw models set high standards for self-rewards, rewarded themselves sparingly and only when they attained a superior performance. This suggests that the behavior of the models is influential in the development of self-control as well as in the transmission of standards for self-rewards. The children tended to match the patterns for rewards set by the adult models more closely than those set by peer models. The results showed that patterns of self-reinforcement can be acquired imitatively through exposure to models, without the subjects themselves being administered any direct differential reinforcement by external agents.

Another study was devised to further examine the formation of personal standards. In the experiment previously described, the children modeled their own standards after those of the model. It was thought that this was partly because the performance scores had little absolute value and therefore the evaluation of the model served as a primary basis for judging what might constitute an inadequate or superior performance. This study was also designed to see if observers would select models who were similar to themselves in ability and reject those who were markedly divergent. It was predicted that subjects would adopt the self-reinforcement standards of the model whose ability or competence was similar to their own. They would disregard the examples of those whose accomplishments were too different from their own and adopt a more reasonable standard for themselves. The investigators hypothesized that even low or merely adequate performances by adults would be highly regarded, and if a child matched or exceeded the performance of an adult that it would raise his own self-esteem. It was hypothesized that children attaining the achievement level of even an inadequate adult would tend to reward themselves highly.

In this study, groups of 80 boys and 80 girls ranging in age from 8 to 11 years were given a series of tasks and then they were either told that they were successful or not. Then they observed a model displaying competent, superior or inferior performance. The superior model adopted an exceedingly high standard for self-reward, and the inferior model set a low one. The children assigned to a control group saw no models at all.

Results showed that children who observed inferior models tended to adopt lower standards for themselves and rewarded themselves more generously than children who were exposed to more competent models with higher standards. Children tended to scale down the achievements of the adults to a lower standard more commensurate with their own abilities.

This experiment also examined whether children's willingness to adhere to high standards is affected by their prior success or failure experiences. Children who have had failure experiences tended to reward themselves less than their successful counterparts, a finding that was most noticeable among children exposed to the inferior model. Control subjects who had experienced failure displayed a higher rate of self-reinforcement at lower levels of performance than did children who experienced past success. The investigators suggest that under some circumstances self-gratification may primarily serve a therapeutic rather than a self-congratulatory function. The same principle is seen when a person "treats" himself to a play or a special dinner to help himself over a difficult experience.

Another finding was that boys and girls differed significantly in the frequency of verbal self-praise, but not in the incidence and magnitude of self-administered material rewards, such as candy. Boys were more generous in commending themselves for equivalent achievements.

Contiguity and Other Factors

It is often assumed that the occurence of limitative or observational learning is based on the observer experiencing reinforcing consequences. This does not account for the learning of imitative behavior when the observer does not perform the model's responses during the process of acquisition, and where neither rewards nor punishments are given to either model or observer. It is suggested that in these cases a contiguity theory can best account for observational learning. Contiguity means that events or objects in a series or close to each other in time or space become associated. When an observer then witnesses a model exhibit a sequence of responses the observer acquires through the principle of continguous association of sensory events certain perceptual and symbolic responses that cue other responses even after time has elapsed.

Bandura states that the acquisition of matching responses may take place through contiguity, whereas the reinforcements administered to a model exert their major influence on the performance of imitatively learned responses. Several of Bandura's studies have shown that even children who do not reproduce the aggressive behavior of models were able to describe the behavior in great and accurate detail. When these nonperformers were rewarded they would readily reproduce the modeled behavior. However, these children usually failed to reproduce the entire behavior pattern and this indicates that factors other than exposure to models or contiguity influence response acquisition. It appears that observers attend to models that are most relevant to them. Both prior experience and the distinctive qualities of the modeling example are important in determining the attention paid to it by the observer.

Social behavior is generally highly complex and composed of a large number of different behavior units combined in a particular manner. Bandura points out that such responses are produced by combinations of previously learned components which themselves may be intricate units. The rate of acquisition of new responses will then be partly determined by the extent to which the necessary components are contained in the repertoire of the observer. For instance, small children may be more able to reproduce motor behavior than verbal behavior.

Learning—Pain, Fear, and Other Emotional States

Studies of vicarious emotional learning show that people develop emotional reactions to certain places, people, or events through observing others undergoing emotional experiences. However, the findings reveal wide individual differences in the degree to which people are affected by the emotional arousal of others. Bandura and Rosenthal reasoned that observers who are easily suspectible to emotional reactions and who are emotionally aroused at the time of exposure to the affective expressions of others will show the strongest emotional learning. To test the hypotheses, adults observed a model performing a task when a buzzer sounds and then the model feigns an expression of pain as though he had been shocked. Throughout this period, the observers' physiological responses were measured to determine the degree to which the formerly neutral buzzer had taken on negative emotional value for the observers as a result of the other person's adverse experiences.

Prior to the emotional conditioning phase of the study, observers experienced different degrees of emotional arousal produced both physiologically and psychologically through the administration of epinephrine, a sympathetic stimulant. Before the study began all subjects completed the Taylor Manifest Anxiety Scale to provide a measure of their general susceptibility to emotional arousal.

The results show that the observer's level of emotional arousal is a significant determinant of vicarious emotional learning. Observers who experienced either very low or very high arousal displayed the weakest vicarious learning of emotional responses, whereas those who were under moderate arousal were affected most. Interviews conducted with the adults after the experiment was completed disclosed that those in the high arousal groups neutralized the emotion-arousing situation by diverting their attention from the model's distressing cues and by conjuring up positive or relaxing thoughts. Further study of these cognitive activities may throw light on how people insulate themselves against the distressing experiences of others. In this experiment some subjects felt extremely empathic with the model and others derived considerable satisfaction from witnessing pain being inflicted upon the model.

Therapeutic Applications of Modeling Procedures

Research in this area has shown the potential of modeling influences for changing people's attitudes, behavior, and even their personal standards of self-evaluation. It is also a potent means of treating powerfully charged patterns such as phobias and fears of long standing. One experiment, reported in 1967 by Bandura, Grusec, and Menlow, treated children who were extremely afraid of dogs. During the course of treatment, the phobic children who observed a bold peer-model handle dogs comfortably and appropriately, lost their fears.

After being referred by their parents, the children were given standardized performance tests, on the basis of which 24 boys and 24 girls, ranging in ages from 3 to 5 years, were selected.

The initial selection test included a graded sequence of tasks which involved increasingly intimate interactions with a dog. Initially, the investigators brought the children into a room where a cocker spaniel was confined in a modified playpen. Later, tasks were required which ranged from walking up to and looking at the dog, to finally climbing into the pen with the dog, petting her, scratching her, and then remaining alone with the dog in the room.

The children were then assigned to one of the following treatments: a modeling-positive-context where a fearless peer model exhibited progressively bold interaction with a dog in the midst of an enjoyable partylike atmosphere; a modeling-neutral-context where the subjects observed the same type of brave behavior modeled, but in a neutral atmosphere; an exposure-no-model condition (here the children saw the dog, but with the model absent); a positive-context group which participated in the party, but were never exposed to either the dog or the model.

The day after the treatment series was completed the children were tested with the experimental animal; then about 1½ hours later, with an unfamiliar white mongrel. The dogs had been tested prior to the experiment, and it was established that they were about the same in terms of activity level and attractiveness. Half the children were tested with the familiar animal first, and then with the unfamiliar white mongrel; for the remainder, the sequence was reversed.

A month later a followup evaluation was done, and the children were again tested to determine the stability of the treatment effects, as manifested by the children's willingness to interact fearlessly with the dogs. The two groups of children who observed the peer model interact fearlessly with the dog, achieved and retained substantial reduction in their fears of dogs. In an effort to minimize the cognitive aspects, all the children were informed that the test animals were harmless. After the experiment was over, the children were told that while most dogs were friendly, before petting an unfamiliar dog they should ask the owner. This was done to reduce indiscriminate acts by the children toward strange dogs.

The effect of the modeling was obvious; the atmosphere, whether partylike or not, had a minor effect, if any.

The investigators speculate that several factors are involved in the extinction or disappearance of the avoidant behavior. One is simply that as the child acquires more information about dogs and about contact with dogs, be becomes less fearful. The nonoccurrence of anticipated adverse consequences to the model, plus the pleasure the model has from contact with the dog, may help extinguish the fear reaction as well.

Treatment of Dog Phobia Through Filmed Modeling

Another experiment was done (Bandura and Menlove, 1968) with children who were seriously fearful of dogs. One group was shown a movie which demonstrated how a single model would display progressively less fearful interactions with a dog, as in the preceding experiment. Another group observed a movie which showed boys and girls of varying ages interacting positively with a variety of dogs of different sizes and dispositions. Children in the control group were shown movies with no canine characters.

Results showed that children who observed approach behavior which resulted in no adverse effects to the model, displayed enduring and generalized reductions in their own concerns about dogs. Controls showed no change. Comparison of the final step achieved (i.e., staying with a dog alone) by children who had seen the single model and those who had seen the movie with many models showed that the latter approach was superior. However, although modeling was equally effective regardless of the severity of the children's phobic behavior, those who manifested a wide variety of fears benefited somewhat less from the multiple modeling technique than children who had fewer fears.

The control children were shown the multiple model film after the main experiment was completed. They were markedly more able to handle dogs after this.

The investigators found here that the symbolic portrayal is less powerful than live demonstrations. A single model seen live is more effective than a single model shown in a movie. However, a movie can be made more powerful by using multiple models and a wider variety of objects than it is usually practical to provide live.

Snake Phobia Project

This project, conducted by Bandura, Blanchard, and Ritter, was carried out with adolescent and adult subjects who were terrified of snakes. In the area of California where Stanford is located, snakes are prevalent enough to seriously limit the life choices of any adult who is severely frightened by snakes. For instance, it would mean he couldn't be in any job where he would be required to inspect houses, read meters, show real estate, do plumbing, or any activity where he might be out of doors or in basements. He would be limited as to the location of his home and be largely unable to participate in many popular local sports, such as hiking or camping.

Fear of snakes is considered by psychologists to be a relatively stable fear and for that reason is often used in laboratory experiments.

The subjects ranged in age from 14 to 60 years of age. Some of the phobias had existed for from 15 to 20 years. In the initial phase of the experiment, the participants were administered a behavioral test that measured the strength of their avoidance of snakes. In addition, they completed a comprehensive fear inventory. This inventory was then available for determination later to determine if reduction in anxiety about snakes brought about other changes.

The cases were individually matched on the basis of their avoidance behavior and assigned to one of four conditions. One group participated in a symbolic modeling treatment where they would run for themselves a film depicting young children, adolescents, and adults engaging in progressively more threatening situations and interactions with a large (about 4-feet long) king snake. The subjects were taught to be relaxed during the film. They were told to stop the film when scenes made them anxious, reverse it to the beginning, and watch it over. They were asked to attempt to achieve deep relaxation at the same time. They were to view the threatening scene repeatedly until it was neutralized for them.

The second group, receiving live modeling with guided participation, watched a model handle a snake in increasing proximity until it was wrapped around him. The subjects were then aided in performing with the snake. The model held the snake and had the subject touch it, stroke it, and then gradually hold it until anxieties about contact were gone. Then the subject and the model performed the tasks together until the clients were able to hold the snake in their laps, to let it crawl around, and finally to retrieve it.

The third group received a form of desensitization treatment. Deep relaxation was paired with imagined scenes of interactions with snakes. As in other conditions, the treatment was continued until the clients' anxieties had disappeared or until the maximum time of 6 hours allotted had passed. This time limit was imposed upon all groups.

Subjects in the control condition participated in the behavioral and attitudinal assessments without receiving any intervening treatment.

In the assessment phase, all initial tests were readministered. In order to test the generality of extinction effects, half the clients in each of the conditions were tested with the now familiar brown-stripped king snake and then with an unfamiliar crimson-splotched corn snake that appeared strikingly different. The rest of the groups saw the snakes in reverse order.

The subjects were asked to look at, touch, and hold a snake with bare and gloved hands; to remove the snake from its cage, let it loose in the room, and then replace it in the cage; to hold it within 5 inches of their faces, and finally to tolerate the snake in their laps while they held their hands passively at their sides. Before and during these tests clients rated the intensity of their anxiety on scales.

Control subjects remained unchanged in their ability to handle the snake. The subjects who had symbolic modeling and desensitization had substantial reductions in phobic behavior, and *live modeling combined with guided participation proved to be an unusually powerful treatment that eliminated snake phobias in virtually all subjects (92 percent)*. The modeling procedures not only extinguished avoidance responses of long standing, but they also neutralized the anxiety-arousing properties of the phobic objects. Both of the modeling treatments achieved marked decrements in anticipatory and performance anxiety. Although subjects who had received desensitization treatment also experienced less emotional arousal when approaching a snake, the magnitude of their fear reduction was significantly less than that shown by their counterparts in the modeling conditions.

It was found that attitude changes toward snakes occurred. The more potent the treatment and the more changed the subjects ability to handle the snake, the greater the positive change in attitude.

In addition, other fears were affected by the removal of the snake phobias. Fear of other issues was relieved in proportion to the potency of the treatments employed. For instance, live modeling with subject participation effected widespread fear reductions, not only related to animal anxieties, but also in relation to a variety of threats involving both interpersonal and nonsocial events. The investigators note that this seems to involve two different processes. The first involves generalization of extinction effects from treated stimuli to related anxiety sources. In other words, being relieved of one serious fear makes a person generally less fearful and more able to cope realistically with other concerns. The second entails positive reinforcement of a sense of capability. Having successfully overcome a phobia that had plagued them for most of their lives, subjects reported new confidence that they could conquer other problems and successfully deal with other anxiety-arousing situations.

A 1-month followup assesment revealed that the beneficial changes produced in behavior, attitudes, and emotional responsiveness were effectively maintained. The clients also displayed evidence that the behavior improvements had been carried over from the therapeutic to the real-life situations. They were able to hike, garden, and even help frightened friends or children overcome fear of snakes.

It is the conviction of these investigators that any type of phobic disorder can be succesfully treated by this method with considerable success. Subsequent experiments show that information alone does not contribute to therapeutic change. It was primarily through a combination of demonstration, information, guided performance, and the control over observational experiences that this success was achieved.

Other snake phobia treatment experiments have been done with children as subjects, and these have been equally successful.

A slightly different type of therapeutic program was developed by Robert O'Connor working with Doctor Bandura to improve the social behavior of withdrawn children in a nursery school setting. A group of withdrawn children was shown films of children playing together and having a very good time. Another group, as controls, was shown a movie about Marineland, instead. The group of withdrawn children, who had seen the movie designed to help them overcome their social inhibitions, showed demonstrable improvements in social interactions; those who had seen the other film, showed no change in their behavior.

Conclusions

There is little doubt that filmed or televised images have tremendous power to shape attitudes and behavior. That this deserves investigation can hardly be questioned when we realize the almost universal contemporary exposure to TV. The complexity of the problem and the successful study of TV and movies are best approached by isolating factor after factor, and then painstakingly evaluating the results. These studies are even more striking when it is clear that they, for the most part, deal with the impact of single incidents with relatively little reinforcement, whereas the average commercial-viewing fare is repetitive and often highly glamorized. The multiple violent techniques demonstrated by a wide variety of relatively unpunished people on TV can be expected to be highly effective in teaching, and even in eliciting violent and aggressive behavior in the viewers. On the other hand, there is the same potential for influencing viewers toward positive action and more constructive methods of problem solving. Unfortunately some of the problem-solving forums that are televised, such as the U.N. in critical debates, are repetitious, monotonous, lacking in the pace and focused force of the usual programming, even though there is no denying their importance. Television can contribute to the dissemination of information and be highly influential in developing awareness. However, this research points out that, at times, new information without some guide as to action can arouse increased anxiety. The stream of information about slums and racial tensions without constructive proposals may illustrate this phenomenon.

Since people can imitate more successfully acts that are within their own range, they may imitate the more direct acts rather than the more abstract ones. This is likely to be especially true of children who, for instance, are more likely to have extensive physical vocabularies than verbal ones.

Doctor Bandura's research has dealt with the simpler units of behavior, and he indicates that he feels that more research should be done in terms of subtle factors. Physical violence is not the only kind of destructive act and, perhaps, even more benign than some types of interactions between people. For example, the portrayal of racial prejudice, the dramatizing and romanticizing of poor marital interactions, lying, and cheating, may be more important than the number of fist fights and murders that are seen. In addition, Dr. Bandura states:

> "All the laboratory studies that I have reported deal with the immediate impact of a single exposure to aggression on the viewer's attitude and conduct. While the questions about immediate effect have been clarified to some extent, we need much more research on the cumulative impact of television, and the way in which the medium combines with other beneficial or adverse influences in the shaping of people's thoughts and actions."

He also points out that results of recent studies of therapeutic applications of modeling show that such influences can produce generalized and enduring effects.

Another factor is the number of people exposed to essentially the same stimulation. The same visual images are seen by people who ordinarily would not come into contact with the same influences. The cultural spread is much larger than ever before in history. Certainly, an unprecedented audience all over the world witnessed the Apollo 11 walk on the moon.

This body of research points up the fallacies in several popular ideas. One is that violence only affects those who are already violent or deviant and involved in aggression. This has not been borne out. All viewers tend to be affected. Normal children also learn and are encouraged to perform aggressive acts by viewing them under certain circumstances. Another idea is that if parents instill in their children adequate standards of what is right or wrong, the violence they see will "wash over them." It was clearly demonstrated that even where children can label behavior as bad or wrong, if it was successful, they may imitate it and the conflicts would be resolved more often by a reevaluation downward of the worth or the role of the victim. Whether or not the observed aggressive acts are successful becomes more important than the moral value of these aggressive acts.

Perhaps the most prominent idea which has been questioned is that of catharsis. There is no evidence that viewing violence, at least in most forms, dissipates aggressive drives and makes a person more healthy. In fact, it has been demonstrated that a frustrated viewer watching violence would become less inhibited and more likely to act on violent impulses.

The difference of sex roles and the impact of male and female models have been briefly discussed and seem important. Clearly, our society works toward helping girls inhibit aggression and to enhance masculine roles at the same time. The boys are given more latitude towards aggressive expression and less toward the emulation of any feminine traits. Still the effects cannot be oversimplified, as can be seen in the new phenomenon of unisex clothes and the girls who picket, swear, and attack the police; and boys who embrace nonviolence even to the point of choosing prison over the army. What part in this was played by TV is not fully understood. This is the generation, however, that is often referred to as the "TV generation" and one of the first groups to have been exposed to its influence during the entire span of their lives. Doctor Bandura points out:

> "It is evident that observers do not function as passive videotape recorders which indiscriminantely register and store all modeling stimuli encountered in everyday life."

The tremendous prices commanded by advertising time on TV would alone testify to the power that both the industry and the public attribute to it.

Learning often takes place in a neutral setting and even with strict prohibitions, and then acts are later effectively performed. The police recruit learns to shoot on a range, the army enlistee at a camp. Later they shoot people. Undoubtedly parents can have a considerable effect on their children's activities, either by monitoring what is seen or by encouraging or discouraging imitation. This research shows, too, that the learned behavior may still be retained. However, it will take more to break down a parental prohibition if it is firmly expressed on the part of the parent than if no intervention is attempted.

Many issues, such as moral and personal achievement standards, often considered the province of the parent, school, and church are now being directly and powerfully influenced by other sources, such as TV. Certainly, censorship seems a limited answer. It is doubtful, for instance, that merely banishing cigarette commercials from TV would have been as effective as the antismoking campaign has been. It may be that the key lies in the presentation of a broader variety of ideas and more objective information.

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REDUCING THE EFFECTS OF CULTURAL DEPRIVATION

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Introduction and Summary

During the first 15 or 18 months of life, a number of investigators have reported, children from one racial or socioeconomic group score about the same in tests of intellectual functioning as those from another. By school time, though, different groups have reached different levels; in particular, children from families of low socioeconomic status have a lower average IQ than children from families of higher status. The schools do not change this difference.

Other studies have shown that intellectual level, as measured by mental tests, is closely related to verbal ability, as measured by tests of vocabulary and information, and that disadvantaged groups score lower on these verbal tests than on others. It has also been shown that the children in these groups receive less verbal stimulation from parents—through being talked to, read to, taken on trips, etc.—than children in middle-class groups, and that the parents are usually not very good examples for children to follow in learning language.

These findings suggest that:

- Children from low socioeconomic groups develop deficits in intellectual functioning because they lack adequate intellectual, particularly verbal, stimulation.
- One reason many disadvantaged families remain disadvantaged, generation after generation, is the lower ability of their children to profit from our educational system and, therefore, a lower ability as adults to compete in our economic system.

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[1] This research was planned by Earl S. Schaefer, Ph. D. of NIMH and carried out in consultation with him. Doctor Furfey served as project director as well as Co-Principal Investigator.

- If adequate stimulation can be provided early enough, it should prevent deficits in intellectual functioning and thereby help break the cycle of poverty and cultural deprivation.

To test one means of providing such stimulation, Earl Schaefer, Ph. D. of NIMH's Center for Studies of Children and Family Mental Health, initiated the Infant Education Research project in 1965. This is a project guided and financed by the Institute but carried out by a staff directed by Msgr. Paul H. Furfey, Ph. D. research associate, Bureau of Social Research, Catholic University. Under it individual tutoring—an hour a day, 5 days a week—was provided to a group of 28 Negro boys from slum areas of Washington, D.C.

The tutoring began when the youngsters were 15 months old and continued for 21 months—the period in which differences between groups in their average level of intellectual functioning first appear, and also the period of early verbal development. The tutors were young women, who talked to the children, read to them, played with them, brought them toys and puzzles and picture books, took them on walks and trips—in short, tried to provide the kinds of mental stimulation necessary to a child's development but not commonly found among the most disadvantaged families. The tutors dealt with emotional and behavioral problems as well. When the children were 3, most of them were enrolled in nursery schools, and monthly discussion groups were set up for the mothers. Serving as controls were 30 Negro boys from similar neighborhoods, who received the same tests as the others but were not tutored.

The investigators hoped to learn whether or not this kind of experience between the ages of 15 months and 3 years makes a difference in intellectual functioning and, if so, whether or not the difference persists.

The results to date show that the project has indeed favorably affected the mental development of the tutored youngsters for at least a time. When the infants were tested at the age of 14 months, a month before tutoring began, both groups scored above normal on the Bayley Infant Scales, which are concerned mainly with sensory and motor development and with alertness and interest. The children in the experimental group were found to have an average IQ of 105; those in the control group, of 108.

At 21 months, after half a year of tutoring, the average IQ of the experimental group was 97; of the control group, 90, a difference significant at the .05 level (it would occur by chance only 5 times in 100). The test this time had a number of verbal and cognitive items, which are included in the Bayley scales for this age level. Scores on such items, which are closely linked to success in school, are strongly affected by environment. Presumably the environment had affected both groups adversely, but 6 months of tutoring had brought the experimental group close to normal.

At 27 months, the average IQ of the experimental group, as measured by the Stanford-Binet test, had advanced to 101, and at 36 months, to 106. For the control group, the scores were 90 and 89. The difference between the groups was significant each time at the .01 level. At 4 years, on the same test, the children who had been tutored rated exactly normal, 100, as a group; the other group rated 90.

In addition to the IQ test at 36 months, the investigators used:

The *Johns Hopkins Perceptual Test*, in which the child is given a form—a triangle, say—and asked to match it with one of several other forms.

The *Peabody Picture Vocabulary Test*, in which the child is shown several pictures at a time and asked to point to the one illustrating a given activity or object ("show me running" * * * "show me horse" * * * "show me vegetable").

A *preposition test*, developed by Schaefer, which asks the child to place something *over* something else, *behind* it, *by* it, and so on.

The tutored children scored significantly higher on the perceptual and vocabulary tests than the other children, but not on the preposition test.

After each test, the children were rated for *task orientedness*, meaning their attention to the job at hand and their cooperation with the tester. At three, this factor was found to correlate with the test results, as expected. More important, both this factor and the test results were found to correlate highly with the mothers' interest in the children, as rated by the tutors. Where maternal interest was rated high—as judged, for example, by the mother's efforts to adequately feed and clothe the child and to express herself verbally with him—the child's test scores were also likely to be high. Mothers rated low in this respect were likely to rate high on a child neglect factor, whose elements included inadequate care, irregular meals, inadequate clothing, sickness, accidents, and beatings. The children of such mothers tended not only to do poorly on mental tests but also to display behavior marked by belligerence, irritability, and negativism.

Nothing in the family—income, parents' education, presence or absence of the father—correlated with the intellectual functioning of the child except the mother's interest. At four, maternal interest no longer correlated with task orientedness, but it did still correlate with the children's IQ.

Just why the experimental group dropped from above normal in intellectual functioning at the age of 3 to normal (although still 10 points above the control group) at age 4 is a matter of conjecture. Doctor Schaefer thinks it is because the tutoring stopped, except for sessions twice a month. "It is quite clear," he observes, "that if we tutor a culturally deprived child for 21 months we increase the rate of his intellectual growth during that period. But it is not clear that he will stay at the level he reaches then unless the extra stimulation is continued; the evidence at this point is that he will not.

"The question is not how to offset a poor genetic potential. The project demonstrated that these lower-class black children had the genetic potential for an adequate level of intellectual functioning: with only 5 hours a week of stimulation, they scored above the norms during the period of stimulation. The question is, how can we foster that genetic potential over the long run?" Schaefer's answer, set forth more fully in a later section, is: by early and continued stimulation—to be achieved by educating future parents to be good parents.

The Infant Education Research Project is continuing. When the children are in kindergarten, between the ages of 5 and 6, tutors will visit the homes of those in the experimental group twice a week, primarily to work with the mothers in the use of educational materials. The mothers will also be taken on visits to the school, in the hope of developing better relations between home and school, and they will continue to meet monthly. Both the experimentals and the controls will be tested during the first year of elementary school to learn if the benefits of the intervention program continue. Also, younger children in the families are being tested to learn if there has been a carryover from the tutoring. (At present there is only anecdotal material. For example, one mother spoke of the child being tutored as "your" child and of her new baby as "my" child. When the tutor came to teach the older baby, the mother would sit in the next room and play with and talk to the new baby. This one became quite precocious in language, speaking in sentences at the age of 13 months.)

Staff members believe that a program based on the one reported here but not intended as a research project could be mounted in any community at no great cost. The tutors could be either mature women or high school girls, chosen for their ability to relate to children and properly trained and supervised. Most of the recordkeeping and psychological testing could be eliminated.

However, staff members also believe, on the basis of the work so far, that ways should be found of working with everybody in the family—not just with the youngest child and to some extent his mother. If the whole family were brought into an educational project, they think, the older children and the parents would become more interested in and capable of carrying on measures that stimulate intellectual growth. So the project should have a broader and longer lasting effect.

Two subsidiary studies likely to be of help in future work with disadvantaged groups are under way. One, by Doctor Furfey and Doctor Mary Elizabeth Walsh, of the Bureau of Social Research, is an analysis of the children's cultural background, based on the tutors' observations of daily life in the homes of their charges. The other, by Doctor Edna O'Hern, of the Department of Sociology, St. Francis

College, New York, is an analysis of the children's language, based on their taped responses to pictures.

Findings of Earlier Studies

When Schaefer, working with Catholic University's Bureau of Social Research, proposed the Infant Education Research Project in 1965, considerable evidence had accumulated that the intelligence level of children in poor environments could be raised. The most dramatic example had been reported by Harold M. Skeels and Harold B. Dye in 1939.

Skeels and Dye studied 25 children who as babies had been committed to an orphanage which had few attendants and provided little stimulation. At ages running from 7 months to 3 years, 13 of the children—all of them showing evidence of marked retardation—were transferred to an institution for the mentally handicapped and placed in wards of the older and brighter women, one or two babies to a ward. These women, with mental ages of 9 to 12, gave the babies adoring attention. Over the next year or two, the children made extraordinary IQ gains, ranging from 7 to 58 points. Most of the children were later placed in adoptive homes. Of the 12 children in a contrast group, left in the orphanage, only one showed an IQ gain, of 2 points; the others had losses ranging from 8 to 45 points.

In 1966 Skeels published the results of a followup study made while he was at NIMH. As adults all 13 persons in the experimental group showed average or better than average achevement "as indicated by education, occupation, income, family adjustment, intelligence of the children, and contribution to the community." Of the 12 persons in the contrast group, one had died in a home for the mentally retarded, four were in institutions, one was self-sufficient at a middle-class level, and the other six had such jobs as dishwasher, part-time cafeteria worker, and assistant to the gardener in an institution. Most or all of the 12, Skeels believed, would have achieved within the normal range had they been placed early in infancy in suitable adoptive homes provided with equivalent stimulation.

Other investigators, among the many who influenced the planning of the Infant Education Research project, had reported:

- No differences between Negroes and whites in mental tests given during the first 15 months.—Nancy Bayley.
- Negro elementary children in five southeastern states have a stable average IQ of 81 for the years 8 through 11.—W. A. Kennedy, V. Van de Riet, J. C. White, Jr.
- Infants whose mothers had been instructed to read and talk to them began at 17 months to produce more speech sounds than babies in a control group.—Orvis C. Irwin.

- The intelligence of children reared by foster parents was more like that of the foster parents than of the less educated, lower socioeconomic true parents.—Marie Skodak.
- At 18 months, the IQs of 170 London children were virtually identical, regardless of social class. At 3 years, children in the upper class showed a gain of about 22 points; those in the middle class, of about 9 points. Lower-class children dropped about four points.—C. B. Hindley.
- Groups of Negro children of different socioeconomic classes showed consistent class differences in language skills.—Vera P. John. Later came the finding that the teaching skills of 160 Negro mothers and the performance of their 4-year-old children differed greatly according to the families' socioeconomic level.—Robert D. Hess and Virginia Shipman.
- Among 292 children, both lower class and minority-group status were associated with poorer language functioning.—Martin Deutsch.
- Fifteen children committed to a State institution as feebleminded and given a special 2-year training program showed an average gain 2 years later of 10.2 points on the Stanford-Binet IQ test and 10.5 points on the Vineland Social Maturity Scale. Children in a control group dropped 6.5 points on the IQ test and 12 points on the social maturity scale; in other words they were more retarded at eight than they had been at four. Follow-ups showed that six of the first group but none of the second had been permanently paroled from the institution.—S. A. Kirk.
- All gifted children apparently have received intensive early stimulation. This special stimulation may be indispensable to the development of high abilities. There is no evidence the children suffered ill effects of any kind.—William Fowler.
- "* * * it appears that the counsel from experts on child-rearing during the third and much of the fourth decades of the twentieth century to let children be while they grow and to avoid excessive stimulation was highly unfortunate. * * * It is no longer unreasonable to consider that it might be feasible to discover ways to govern the encounters that children have with their environments, especially during the early years of their development, to achieve a substantially faster rate of intellectual development and a substantially higher adult level of intellectual achievement. * * * The fact that it is reasonable to hope to find ways of raising the level of intellectual capacity in a majority of the population makes it a challenge to do the necessary research."—J. McV. Hunt.

Training the Tutors

The tutors were chosen because they were intelligent, outgoing women interested in working with children. All had had experience in jobs—teaching, social work, nursing—that brought them in touch with children. A few were mothers. With the exception of a woman who was still in college, all were college graduates. Five were black and four white. They worked together beautifully, a project official reports, and those of one color seemed to get along with the children as well as those of the other. (Each child had two tutors—generally one of them black, the other white—who alternated weekly in working with him. This arrangement was intended to lessen disruptive effects in case a tutor left or was changed, to reduce any feeling on the part of the mother that the tutor was competing for the child's affection, and to provide two different observers of the child and his family.)

During the initial training period, which ran for about 2 months, half-time, the tutors heard and discussed lectures by Schaefer, Furfey, and others on child development, the special problems of the disadvantaged child, and means of overcoming those problems. The need to develop and maintain a relationship that would foster the child's interest, happiness, and success in his new experience was emphasized. If this need were to be met, the tutors were told they would have to accept the child's interests, praise his achievements, and enthusiastically explore new learning opportunities with him. The interaction between tutor and child was to be playful, spontaneous, and pleasant; formal instruction would be avoided. A tutor must be aware that a child's early learning involves a great deal of looking, listening, tasting, smelling, and feeling. She must also be aware that she is a model for the child—and the mother—to imitate. She will name things casually but often—toys, household objects, pictures in books, events, clothes, the child's body.

"We are all investigators, researchers, experimenters together," Schaefer told the tutors. "We are searching for a method of early education which will raise the intellectual functioning of children and increase their ability to do well in our American school system. We think we know some of the characteristics which help children to succeed in school. We think it helps a child to be cooperative, outgoing, verbal, friendly, helpful to others, resourceful, curious, attentive, to have goal-directed behavior and be able to concentrate and persevere. It helps if he has developed a feeling of competence and of human worth, if he is able to assert himself in a positive way and make a worthwhile contribution to a group. It is of great value that he have good comprehension and a good vocabulary. We hope to find ways of developing at least some of those characteristics."

Examples of a number of specific activities that might be used during the tutoring sessions were discussed—among them, blowing bubbles, playing with beads, making things with pipe cleaners, playing a guessing game, making a pull toy, having fun with paper plates, and playing a sorting game. The tutors were asked to encourage the child to participate in any activity as much as possible and to talk to him about what was going on. If tutor and child were making a bean bag, for example, the talk might go something like this:

We will make a bean bag.
Please hold the cloth for me.
I will cut it.
Be careful. The scissors is sharp.
Move your hands.
That's it.
Now we can sew it.
Look at this needle.
See the tiny hole.
We have to get the thread in this tiny hole—the eye of the needle.
Look at my thimble.
Try it on your finger.
See how it fits on mine.
Please hold the cloth while I thread the needle.
Watch me thread it.
You can string beads. Some day you will be able to thread a needle.
Now. I will hold the bag open while you put the pebbles in.
Put in one; now one more.
Put a whole bunch in at once if you can.
Now we will sew up the last side.
We must sew it so no pebbles will fall out.
See. It's all done.
Thanks for helping, Johnny. Johnny helped to make a bean bag.
See. Isn't it pretty. We're all finished.
Now move back, so I can throw it to you, etc.
Now let's try throwing it into that pail. Let's take turns, etc.

Making a bean bag would be fun. It would also help the child build his vocabulary. And it would help him in learning to count, learning goal-directed activity, learning that a combination of materials can make something different from the original materials, and learning that a person can create something and then have fun with it.

Emphasis throughout was placed on language stimulation. Schaefer urged the tutors to get the children "hooked on books."

The technique of *transfer*, too, was emphasized. "Children are happier and more comfortable with the familiar," Schaefer pointed out. "They can even become frightened by something entirely novel. Begin work with something familiar to the child. If it is something he likes and enjoys you will soon be able to transfer to a slightly different use or activity and thus capitalize on the child's initial interest and pleasure.

"For example, if he finds it fun to shake jingle bells because he enjoys the sound, you may later be able to transfer to sorting jingle bells according to size or color, counting them, making things with them, etc., and still maintain his interest and joy, while at the same time stimulating new learning."

As part of their training, the tutors observed the activities of children in day centers, an orphanage, an institution for delinquent children, and the homes of middle-class families having children of roughly the same age as those in the project. The tutors also recruited the families for the research program, by knocking on almost 200 doors in several of Washington's worst slum areas, and thus became acquainted with the types of homes they would be going into. And each worked for two weeks with a pilot case, a child who was a little too old to be chosen for the project.

There was in-service training, too. Each tutor discussed cases frequently with the leader of the tutoring team (in the beginning a speech therapist who had been a teacher of preschool deaf children, and since mid-1967 Mrs. Lillie Davidson, formerly a nursery school teacher, a supervisor of teachers, and a supervisor of children's counselors in a center for homeless children). Case conferences involving Schaefer, Furfey, the head of the tutoring group, the tutors, and sometimes a mother and her child were held frequently. All the tutors met weekly with other staff members to discuss problems and to give and receive suggestions about educational materials and techniques.

The Children and Their Families

The effect of certain environmental factors upon intellectual functioning has been found to differ according to sex.[2] Since the project could not afford a large enough sample to study both sexes, it limited itself to boys because lower class black boys and men seem to have a more difficult time in school and society than girls and women.

The subjects were chosen from census tracts selected because they had high rates of crime, delinquency, infant mortality, joblessness, dilapidated housing, and families on welfare. The neighborhood environment as well as the typical home environment was deprived. Though the experimentals lived in a slightly worse neighborhood than the controls, the children from one area had been scoring much the same as those from the other on the Metropolitan Readiness Test, given to children on entering school. The median scores were approximately at the 20th percentile on national norms, meaning that they fell in the lowest fifth.

Families having a boy of the right age were invited to participate if the home situation was relatively stable—that is, if it did not look too chaotic for daily tutoring session—and if the family met two of three other qualifications: its yearly income was less than $5,000, the mother had not finished high school, the mother had never been employed as a skilled worker.

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[2] The Effect of Childhood Influences Upon Intelligence, Personality and Mental Health in *Mental Health Program Reports—3.*

Among the 98 homes the tutors visited to select the experimental group, 12 were rejected by the staff as unsuitable (because they were considered unsafe for the tutors or too crowded to work in, or because the family's attitude was judged likely to present unduly severe problems). Five other homes were ruled out because either the income or the mother's education was too high. Most of the other rejections were made because the children were not of the right age. Four families refused to participate.

The control group was selected from 89 homes in a slightly better area. Ten were rejected by the staff as unsuitable, and 12 were ruled out because the economic or educational level was too high.

Stipends—$10 for each testing session and $1 for each tutoring session—were offered primarily in the hope of reducing losses from the sample, particularly losses of children with poorly motivated mothers. Since losses were expected to be high in any case, and the project wanted to retain at least 20 in each group, 31 children were chosen to be tutored and 33 to serve as controls. A number of the families have broken up and some have moved, as many as five times. But only three in each group have been lost. (Among the experimental families, one moved out of town; one placed the baby in a day center so the mother could take a job, and the center refused to admit the tutors; and one notified the project that the tutors would no longer be safe: the wife's mother had moved in and she liked to throw things.) This unusual record is attributed both to the interest of most of the mothers in having something done for their children and to the tutors' persistence in following families and staying on the job in spite of any unpleasant circumstances. The staff now thinks that without the financial inducement, no more than three or four of the families in each group would have been lost.

The homes as a rule had neither toys nor books, and the mothers at first seemed to think it a joke to suppose that anything could be taught to a child as young as 15 months. Some of the parents, even some of those on welfare and with half a dozen children, were well organized. The families always had food; the children were sent to school daily; the mother knew how to go to second-hand stores and buy clothes. Other parents seemed overwhelmed by their problems.

The following quick sketches of representative cases are drawn from tutor's reports:

W. lived with his parents, a brother, a sister, an uncle, and an aunt—7 persons in all—in a three-room apartment on the third floor of a rapidly deteriorating house. The rats were so bad, his mother said, that she had to beat on a pan to frighten them away before she entered the kitchen. They had chewed the nose off a doll. The father had a steady job as a truck driver, and the mother worked part-time as a counter girl in a nearby drugstore. She kept the apartment tidy, showed her love for her children, and participated in the tutoring sessions.

At 15 months, J. was a shy, neglected, poorly dressed child who lived with his baby sister and his 17-year-old mother in a dingy six-room apartment, part of an old house. It was occupied by his grandmother, who worked as a domestic, an unemployed uncle, and the uncle's 4-year-old daughter. J.'s father was in jail. The apartment was uncrowded but unpleasant. Fumes from an oil stove, which supplied inadequate heat, made the eyes smart. Chunks of plaster had fallen from the walls. The bedroom floors were littered with soiled clothing. Cockroaches crawled all around. There were no toys or books, but there were newspapers, a television, a radio, and three telephones which had been disconnected. The mother, a high school dropout, was quiet and timid, knew little about raising her children, and was apparently unable to show affection for them. She was interested mainly in going to school and getting a job. J. was cared for by the grandmother, a warm and friendly person and apparently the only member of the household bringing in money, and a babysitter.

When the tutoring began, V. lived with his parents in a spacious one-bedroom apartment and slept with them in a double bed. His father had a steady job, and his mother worked in the afternoon until her husband asked her to quit so she could spend more time with the boy. This was one of the few homes with books and toys. V. was as spoiled as any middle class only child could be. When the tutor and he went for a walk and passed a store without going in and buying something, he had a temper tantrum. One night some men came to the apartment, threatened V.'s father with a gun, and chased him out. The next day the family moved to another section of the city. This was near the end of the tutoring program. The mother seemed despondent over the course of events, and the boy showed hostility toward the tutors.

A. and his mother, brother, and sister lived in a two-bedroom basement apartment that reeked with the odor of urine because the mother washed clothes and diapers together and did not properly rinse them. Sometimes the odor was so bad that the tutor had to take the boy outside. Cockroaches added to the discomfort. The mother, strict and brutal, would punish the children either by striking them or locking them up in a room.

E. was a happy, sociable child who readily sought and gave affection. He lived with his five brother and sisters and his parents in a two-room apartment, which needed repairs but was kept in reasonable order. His mother worked nights in a carry-out restaurant. She loved him and did a good job of caring for him. E.'s parents separated during first year of tutoring, and the mother moved with all the children to another two-room apartment. When E. entered nursery school, she began going to night high school so she could get a better job.

R.'s mother showed the tutor a scar on the boy's upper thigh that had come from a rat bite. She had four other children but managed to sit in on many of the tutoring sessions, often went along on trips, and was proud of R.'s accomplishments. There were books in the house. The family seemed to pay little attention to R.'s father, who did not work regularly. When the mother got a job as a teacher's aide in a Head Start center, the children were sent to a baby sitter's home and the tutoring continued there.

T.'s mother separated from her husband during the course of the project and moved with her six children into a one-bedroom apartment. Three boys and their 8-year-old sister slept in a double bed, another boy in a crib, the newest baby in a bassinet, and the mother in a single bed in the same room. A bed in the living room was often used by overnight guests. The mother, who seemed disturbed as a result of problems first with her husband and then with a new man, constantly screamed at the children and threatened them with belts but got no response. The toilet was usually broken. Some of the children had ringworm. T. kept complaining of being hungry. The tutors found it difficult to get him to concentrate.

Working With the Children

The tutors set out to build friendly, easy relationships with the children by playing with them and talking to them—activities in which some of the mothers had engaged only rarely. Some children made friends almost immediately. Others hung back. With one boy, shy almost to the point of being withdrawn, the tutors had to work almost a year to establish rapport. In other cases, productive relationships developed only after the tutors had worked to change maternal attitudes and behavior.

At the start, the children were given manipulative toys—blocks, pop beads, nesting sets—which they learned to put together and to separate. One toy would lead to a number of activities. Given pop beads, for example, a child would feel them, swing them in the air, and chew or suck on them. Perhaps he would learn by accident that they could be pulled apart. This delighted him. Putting them together was too difficult for most of the children at 15 months, so the tutor would show how to do it and then guide the child's hands till he could do it himself. Other activities with beads included hiding some of them around the room for the child to find and add to the string, using a long string of them as a pull toy, counting, naming colors, and matching according to color or shape. Along with the simple manipulative toys, the child was given opportunities to play with balls of various sizes, a kiddie-car, a pounding bench, and other toys that helped develop the larger muscles.

Always the tutor talked to him about what was going on. When a new toy—for instance a ball—was presented, she would name it. The games that could be played with the toy gave the child opportunities to hear, imitate, and learn other new words—for instance, *roll*, *throw*, *catch*, and *kick*. As the child matured, the tutor would talk about the different sizes, kinds, colors, and number of balls.

If a boy liked a toy car, the tutor would talk about that car and other cars. Then she would get a book containing pictures of cars and talk with the child about what he saw on each page. When tutor and child went for a walk, they would talk about the cars seen. Looking at pictures of cars in a book helped develop an interest in books, too. One tutor was surprised and pleased to find the children associating one make of automobile with her. When they saw this auto in a book or on the street, the response would be, "Tha' teacher's car!"

Toys were used not only to aid physical development and to teach language but also to develop two of the characteristics essential to the mastery of schoolwork—attentiveness and perception. Here puzzles were considered especially valuable. First came simple, isolated-object puzzles—for example, a board containing pictures of three kinds of fruit, to be taken out and put back in—which were introduced between the ages of 15 months and 2 years. More difficult puzzles followed. One tutor, Betty Pair, describing her experiences for the benefit of other persons working with children, wrote:

"We talk about the puzzle while it is still intact; then dump out the pieces (this act I leave to the child, because he seems to derive great pleasure from the dumping); then talk about the side with colors on it and the dark, rough side; then trace with our fingers around the inside of the puzzle; then attempt to fit the pieces in the puzzle.

"It is important that the child complete the task, but it is imperative that he not become so frustrated in his attempt to do so that he sets up a negative block against the activity. For this reason, I initially put the pieces back slowly in the puzzle so that the child can observe me. This is the 'I Can Do It' part. We then see if he can do it, with the assistance he may require to prevent overt frustration. When there are signals that assistance is required, I put my hand over the child's hand on the puzzle piece, and I explain, 'Turn it around,' or 'Turn it over,' or 'try another space,' as we do what each command directs."

Another tutor, Lucile Banks, offered these suggestions:

1. Present puzzles as enjoyable games.
2. Demonstrate how pieces are placed.
3. Give each piece a name.
4. Begin by taking only one piece out of the board at a time.

5. Finish one puzzle before starting another.
6. If frustration persists, direct the child to a more relaxing activity—such as painting or a favorite toy.
7. Praise the child.
8. Present puzzles already mastered for relaxation and reinforcement.

Through playtime activities, the tutors also worked to modify undesirable behavior. If a child were hyperactive, the tutor would try to get him interested in one activity—like putting rings on a stick, arranging animals, building a wagon—and would work with him to see it completed. "Well, Bobby," she'd say, "let's finish this. I will help you. * * * No, we aren't going to play with that until we've finished this" or "until we've picked this up and put it away."

Toys are credited with having aided social development, because they usually had to be shared with other children in the house, either during the tutoring sessions or between them. Generally a toy was left in the home for several weeks. If it became a favorite it might be left longer, or one like it bought as a birthday or Christmas present.

Tutors and mothers worked together to make toys. Milk cartons—cut into squares and the squares covered with paper—became blocks; oatmeal boxes, drums; pierced bottle caps on a string, a tambourine. Bleaching compound bottles were shaped for use as dolls' cribs. A roll of shelf paper filled with sketches ("This is Jim * * * he lives in a house * * * he has 3 brothers * * *") became, as it was slowly unwound, a movie. Two cans and string made a walkie-talkie. Tutors and mothers also spray-painted cartons for use in storing toys, and they cut down large soap-powder boxes to make cases for children's books.

Books were introduced early in the project, though the attention span of these 15-month olds was very short. To win the children's interest, the tutors tried to relate things seen in books to things known in daily life. Sometimes they would carry books with them on walks and point to a picture of a dog or a tree, bird, truck, and then to the real thing. Adults and children in illustrations showing family groups would be named after the persons in the child's family. Books that a child found especially appealing would be presented again and again, unless he showed boredom; books that had no attraction for him would be taken away but might be introduced again later.

One boy clearly preferred books about horses. So his tutors dug up as many horse books as they could find and they took him on trips to see horses and to ride ponies. Whenever a tutor showed him a picture of a horse, he would tell her about these trips. Sometimes he would sit for an hour looking at a book with pictures of horses in it. A boy who preferred books about animals in general was taken not only to the zoo several times, but also to the Rock Creek Park Nature Center, the natural history exhibits at the Smithsonian, and the circus. And his mother took him to the country.

With the child, and sometimes his mother, watching and helping, the tutors made books by cutting pictures from magazines and pasting them in scrapbooks. Some of the books were concerned with a single subject—babies, for example, or automobiles. Others had pictures chosen because they would remind the child of things he and the tutor had seen at the zoo, or in a store, or during a walk around the block. Scrapbooks were also made to illustrate such concepts as big and little (an elephant and a mouse), one and many (automobile tires), old and new (shoes), and circle and square. Other scrapbooks were used to teach numbers. A picture of one sheep would be headed, "This is 1"; of two donkeys, "This is 2," and so on. The numerals were cut out of sandpaper so the child could feel as well as see them. The homemade books were left in the home for use whenever the child liked. So were some of the others, particularly the cloth ones.

The tutors also told stories, read stories, and used the combination of story book and record player.

During their third year, most of the children went to the library a number of times and checked out, carried home, and kept for a few days a book of their own choosing. The children by this time had come to expect the presentation of at least one book, old or new, during each session, and books often took up more of the session than toys. "Hey, Teach," some of the children would say as the tutor entered, "I wanna book."

Music, too, was part of the curriculum. The tutors would sing to the children, play songs and other music on a record player, and use homemade or inexpensive children's instruments— drum, tambourine, bells, xylophone—to help the youngsters express rhythm and time.

"When the babies were young (15–18 months)," reports one of the tutors, Patricia Chernoff, "I held them in my lap or arms, facing me, and moved my body or knees to the rhythm of the song, at the same time articulating the words carefully and drawing the child's attention to my singing by holding him close and using exaggerated facial expression. I repeated the same songs until eventually the child attempted to sing. At this point, I simplified the words, concentrating on those which were repeated most often in the song and therefore easiest to perceive and repeat. For example, in presenting "Shoo, Fly, Don't Bother Me," I sang *Shoo Fly* with greater emphasis and volume than the rest of the words, expecting the child to repeat only those two words. Gradually, when he was able to sing *Shoo Fly* in the correct places throughout the song, I encouraged him to add the remainder of the phrase, *don't bother me*. The phrase, for *I belong to somebody*, because of its length and the rhythm with which it is sung, comes much later. When the child is unable to perceive the words from the recorded presentation, I have repeated them more slowly, later without the recording.

"Once the child has become interested in the actual singing of the songs, I have lessened body contact and emphasized the rhythm, concentrating only on the words. When the child becomes tired of singing, I terminate the music session rather than changing the emphasis to clapping, etc.

"I have found that the length of time required to learn a song has lessened considerably (in some cases, the child enters in during the first presentation) as the children become able to focus their attention on the words and as I continually reinforce with praise and enthusiasm their attempts to sing the words."

A child's birthday was always recognized, usually by a party and a book or a toy from the tutor. If a party could not be arranged, tutor and child would walk to a store to pick out a present.

Influence on the Mothers

The tutors believe that they have reached each family to some degree. One mother related with pride that whenever she took her boy to the store, he dragged her over to the display of books, and she sometimes bought him one. Another would sit in on the tutoring sessions and often ask questions about aims and techniques. Though she herself could not read, she took out a library card at the tutors' suggestion, and began borrowing books for her three youngest.

At the start, one mother kept screaming at her 15-month old, who liked to get into things: "You are bad—I'm going to beat you." Her attitude was hostile, almost rejecting. As she watched the boy's progress under the tutors, though, she came to recognize his inquisitiveness as a mark of intelligence, and her attitude turned to one of acceptance and even pride. Another woman frequently made out-of-town visits, leaving her boy with a relative. During these absences he was obviously upset; even when the mother was at home he seemed to feel insecure. He became a happy interested youngster only after the tutors persuaded the mother that he loved and needed her, and she began staying home. Under the influence of the tutors, A.'s mother, mentioned earlier, eased her harsh discipline and became so interested in learning how to help children that she took a volunteer job in a nursery school. A.'s IQ, which had dropped from 116 at 21 months to 89 at 36 months, rose to 102 at 4 years.

Some of the women would buy a toy or a book like one brought in by the tutor, or they would ask what they ought to buy. One displayed a 28-piece puzzle she had bought as a Christmas present. Since the boy in the program was only two and a half, the tutor supposed it was for the older children. "No, it's for *him*," said the mother. She dumped the pieces on the floor, and the youngster put them together in a few minutes. The boy's older sister found it difficult at times to keep up with him. The mother called her silly or dumb, till the tutor explained that the girl was smart enough—she just had not had her brother's training.

A number of the families began taking more trips with their children. Some mothers had not known that such resources as libraries, museums, and a zoo existed; others had not known how to get to them. A few mothers hadn't even known what bus to take to go downtown, and one never left the house to go anywhere unless one of the children went along: she didn't think she could find her way back.

The tutors often encountered problems that were outside their province as tutors but not as human beings. For instance, they would find a family sitting around in winter coats because the heat had been turned off. Or the mother would be distraught because the family faced eviction. Or the mother and father had quarrelled, and the mother had gone off to visit relatives. The children in such cases would be upset—fearful, or apathetic, or quarrelsome; one child kept asking his tutor to take him with her.

One woman with half a dozen children had an especially difficult time with her money. (Says a tutor: "To budget welfare money—which is too low anyway—for a month is really a challenge even to someone who has taken a home economics course in college. When the welfare checks come out, food stores raise their prices, and people go around in cars trying to get you to buy nice looking but flimsy clothes that won't last over a month.") After the first two or three weeks of the month, this woman would run out of both food and money. Several times a tutor found the children picking crumbs from the floor and eating them. The project had no funds to feed the family, but the tutors sent the mother to agencies that could give her emergency help. They also went shopping with her and showed her how to choose economical foods, and they brought in snacks for the children.

When the children were three, the tutoring ended, except for twice a month visits, and the project tried to place them in nursery schools. It succeeded in all but two cases, where the family situation was particularly unstable. (An effort to place children from the control group succeeded in only half a dozen cases, partly because the effort was less intensive and partly because the families were little motivated to send their children to nursery school.)

At the same time the mothers were invited to meet once a month, in groups of four or five, for a planned program of discussions of subjects in which they were interested as well as subjects about which the project thought they needed to be informed. Most were pleased to accept and one was delighted: she had always wanted, she said, to belong to something.

All kinds of problems have been discussed—for example, how to tell older children about sex (some of the women said that their own mothers had been too shy to talk to them, so they hadn't known about having a baby until they'd had it); what to do about a child who is having trouble in school or refuses to go to school; how to cope with poor health, bad housing, marital problems. The tutors conducting the meetings have felt equipped to answer some of the questions themselves. They have handled the others by giving out pamphlets on the subject or suggesting that the mother talk with her child's counselor at the school. Movies have been shown—about differences between children at different ages, about sibling rivalry, and about how parents are teachers, too. Mothers with jobs have told how they went about getting them, what training they took, and how they met the transportation problem. Only two mothers have failed to attend any of the meetings.

As one result of the project, at least in part, a number of the mothers are trying to better themselves economically and socially. Using skills learned largely from the tutors, one is working in a parent and child center setup under an Office of Economic Opportunity program, and several as aides in nursery schools. With advice and encouragement from the tutors, others have gone back to school or have entered training programs, in order to get better jobs. Some have sent their children off to school or a day care center, traveled an hour or an hour and a half to attend a training program across town, and hurried home late in the afternoon. After the children entered nursery school, several of the mothers coupled an all day job with a training program at night. They would leave their children at a sitter's home five days a week, picking them up on Friday night and returning them on Sunday.

During the kindergarten year, the homes of working mothers will be visited on Saturdays, and the children of these mothers will be seen at the babysitter's during the week.

Implications for Educational Policies

To summarize, the Infant Education Research Project found that:

1. A tutoring program beginning at the age of 15 months for Negro boys from disadvantaged families and continuing, 1 hour a day, for 21 months significantly raised their level of intelligence until they were 4 years old, at least.

2. The average reached at the end of the third year, 106, dropped six points during the next year but was still significantly higher than the control group's average.

3. When maternal interest was high, a child's IQ was likely also to be high.

How long the benefits from the additional stimulation will continue remains to be seen. But the drop in the peak IQ level after the tutoring stopped, at 3, suggests to Schaefer that short-term programs of early education are not sufficient to develop and sustain the child's potential over the long run. Other studies using different programs of stimulation point to the same conclusion.

The investigator thinks the answer lies in both early and continued education. "Genetics may determine the potential range of a child's intellectual level," he points out, "but the quality of the environment determines the actual level. Evidence is accumulating rapidly that because of physical, social and emotional, and cultural deprivations, many children are not developing their genetic potential, and therefore do not function effectively in school and in society."

Physical deprivations include inadequate medical care, insufficient and low quality food, poor housing, and inadequate clothing. Social and emotional deprivations stem from the lack of stable and supporting relationships with the mother and father or their substitutes. Cultural deprivation occurs when parents fail to provide a stimulating environment. Children who lack pencils, paper, crayons, books, games, and other educational materials do not receive enough training in certain qualities and abilities—such as attention, concentration, perseverence, and perceptual-motor skills—that make for success in school. Children who are not encouraged to talk about their experiences, who do not have models of good language use to follow in their early years, and who have little or no opportunity to make visits beyond their immediate neighborhood are likely to reach school age lacking the language skills, the interest, and the knowledge of more fortunate children.

As Schaefer sees it, the intellectual development of the typical child can be viewed as having four basic stages. In the first, the parent develops a loving acceptance of the child and a positive involvement with him. In the second, this involvement elicits from the child the development of a positive relationship with the parent. In the third, the parent and the child engage together in activities, such as piling up blocks, rolling a ball, looking at a picture book, and the parent by word and by example teaches the child language, skills, and task-oriented behavior. From this early experience with the parent, the child reaches the fourth basic stage—he has acquired the interests and the skills that enable him to learn on his own. "Successful achievement of these early developmental stages in the home," says Schaefer, "may be a necessary basis for a successful education in the school. But deprivation during their own childhood may leave parents without the personal resources to support the optimal development of their children."

Do we then need more nursery schools? More child-care centers that will take children at 15 months and even younger? A spread of tutoring programs, like the one in Washington but lasting longer and made part of the public education system so that every child will be reached?

"We do need to recognize that education goes on from birth," Schaefer answers, "but I think it would be more fruitful in most instances to support parents in their educational role than to set up educational institutions to supplant them. Parents, or at least the mother, are there early and continue to be there. This study found that both tutoring and the quality of maternal care were related to the children's intellectual development at three and four. Tutoring can be thought of as supplementary maternal, or parental, care because in the middle class a good mother, and a good father, does what the tutors have done."

As one hopeful development, Schaefer points to a new Institute-supported project in Prince Georges County, Maryland, that seeks to integrate the educational efforts of home and school. When children are infants, teachers will go into the home to work with the parents; later on the parents will go into the school. But he thinks we ought to look even farther ahead. "If you assume that almost everyone becomes a parent and that one of the most important jobs for each generation is to rear the next generation," he says, "it follows that we should be giving children, beginning in kindergarten and running through the twelfth grade, some of the skills needed if they are to be competent as parents. We should have programs for future parents."

The Washington project has demonstrated that lower class black infants can benefit from additional stimulation. Could other infants also benefit? Schaefer answers that we cannot be sure until programs of stimulation are tested with other ethnic and socioeconomic groups. "Some people say that middle-class parents are doing as well as they can with their children—that nothing else they could do would lead to higher levels of intelligence and achievement. I don't believe that, but it needs to be tested."

"Many parents—and I think they can be found in all social classes—don't have the skills to be effective in their roles as teachers. We need to develop methods of improving the education of young children, and we also need to develop better ways of communicating what we learn—and what we already know, for that matter—to all parents and future parents. If the whole culture became aware of the importance of parents as teachers, I believe it would lead to an educational revolution, and to a better adjusted, more competent, and more intelligent population."

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